HOARD'S DAIRYMAN

MARCH 25, 1956

THE NATIONAL DAIRY FARM MAGAZINE

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HOARD'S DAIRYMAN

The National Dairy Farm Magazine

Publishers
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Fort Atkinson, Wis.

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COVER PICTURE

Typical of hundreds of new installations is this milking parlor operation on the Fred Utley farm, Rock Falls, Ill. Milk from the three-stall milking parlor is carried by pipeline to the bulk tank, in foreground.

The 370-acre farm is tenanted by two brothers, Tony and John Droste, the latter seen through the window of the milking parlor with one of his Brown Swiss cows. This is a Hoard's Dairyman staff photo.

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Hoard's Dairyman is published on the 10th and 25th of each month. Advertising copy for the 10th of the month issue must be received before the 15th of the preceding month. For the 25th of the month issue, copy must be received by the 1st of that month.

Washington Dairygrams

SNARL IN SENATE MAY DELAY FARM BILL. HIGHER PRICE SUPPORTS OPPOSED BY ANDERSON (D), AIKEN (R), AND HOLLAND (D). SUPPORTERS OF A HIGHER LEVEL ARE BEING LED BY SENATOR ELLENDER (D), THYE (R), HUMPHREY (D), AND YOUNG (R). DOUBTFUL THAT FINAL LEGISLATION CAN REACH PRESIDENT BEFORE APRIL.

INCREASE IN DAIRY SUPPORTS OPPOSED BY SENATOR ANDERSON (D), N. M., AND FARM BUREAU. ANDERSON AMENDMENT WILL WIPE OUT 11-CENT PER HUNDREDWEIGHT INCREASE WHICH WOULD RESULT FROM PRESENT SENATE BILL.

SCHOOL MILK AND BRUCELLOSIS FUNDS JEOPARDIZED AS HOUSE AND SENATE CANNOT AGREE ON COMPROMISE. BOTH PASSED BILLS TO PROVIDE ADDITIONAL FUNDS FOR CURRENT YEAR. REPORT HIGH PRICE SUPPORT SENATORS HOLDING UP APPROVAL OF COMPROMISE AS A CLUB TO FORCE DAIRY CONGRESSMEN TO VOTE FOR HIGHER SUPPORTS ON BASICS.

GAS TAX REFUND DELAYED IN ANOTHER SENATE-HOUSE DISAGREEMENT. SENATE WOULD NOT ALLOW REFUND TO OPERATORS WHO CONTRACT WITH FARMERS TO PERFORM WORK.

FARMERS BATTLING TEAMSTERS UNIONS AND RAILROADS ON TRIP LEASING BILL. FARM GROUPS WANT TRUCKERS TO BE PERMITTED TO CONTINUE TO LEASE AGRICULTURAL TRUCKS TO COMMON CARRIERS FOR RETURN TRIPS. SENATE VOTE WILL BE CLOSE.

FREIGHT RATE INCREASE APPROVED BY INTERSTATE COMMERCE COMMISSION. RAILROADS HAD REQUESTED 7 PER CENT. GRANTED 6 PER CENT WITH GRAIN, LIVESTOCK, FRESH MEAT AND PRODUCTS LIMITED TO 5 PER CENT. SOME FARM COMMODITIES HAVE CEILING OF 6 CENTS PER CWT.

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In YOUR next issue!

FLY CONTROL IN 1956 . . . A last minute roundup on the new and old in fly killers, with particular emphasis on the recently-approved, highly-effective diazinon.

RANCIDITY PROBLEM MAY BE SOLVED . . . as an extensive Oregon survey of pipeline milkers reveals the cause of and remedy for this troublesome off-flavor.

HOW THE CONTEST COWS PRODUCED . . . Presenting all of the production records on the 20 cows in our annual Cow Judging Contest. They include some top producers, too.

PLANT ALFALFA IN WIDE - ROW CORN . . . Here's what we have learned in several states and the resulting recipe for success in this new type of seeding practice.

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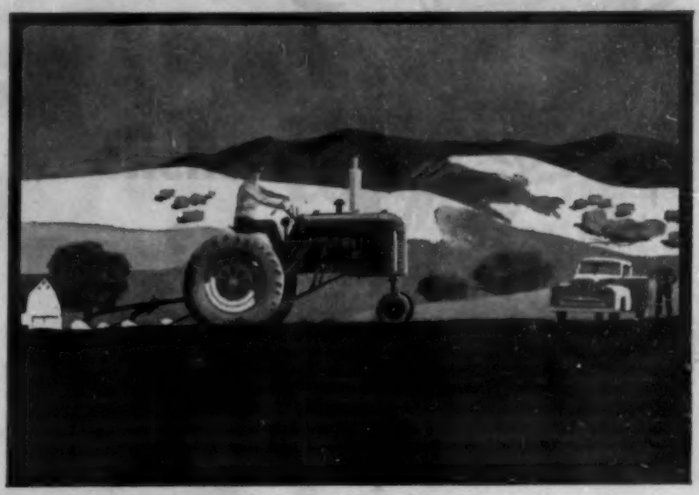

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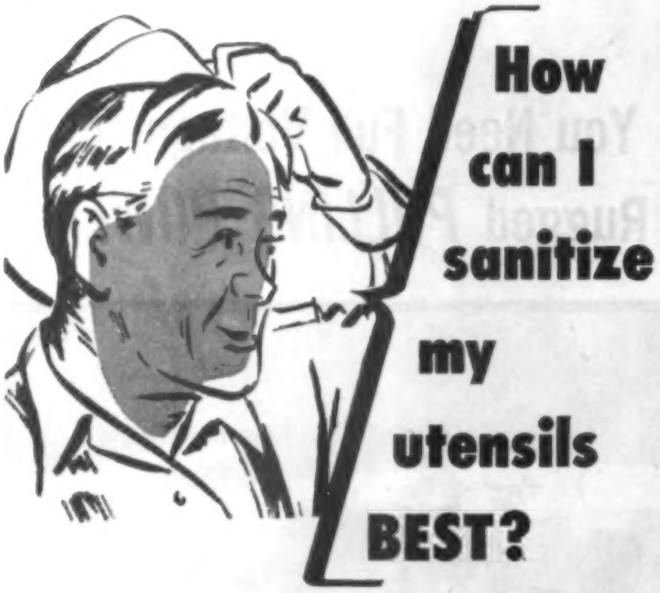

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Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish, critical or commendatory. Hoard's Dairyman assumes no responsibility for opinions expressed.

Expresses our thinking

Our executive committee meets every Monday and, during our session yesterday, the editorial comments in the February 10 issue of Hoard's Dairyman came in for a great deal of praise.

They were particularly pleased with the editorial, "Farm Bureau and Farmers Union Ignore Dairymen." You are certainly expressing the thinking of our officers and of a majority of our members, too, I am sure.

I would also like to take this opportunity to commend your efforts in presenting, in easily readable form, information concerning federal and state milk marketing orders. It is a difficult but, nevertheless, a worthwhile endeavor.

Minnesota — G. N. PEDERSON, Twin City Milk Producers Assn.

. . . no intelligence

While I usually marvel at the intelligence exhibited on the editorial page of Hoard's Dairyman, your editorial in the February 10 issue on "Farm Bureau and Farmers Union Ignore Dairymen" shows not the slightest degree of intelligence. While I can't speak for Farmers Union, having no experience as a member of that organization, I can, as a Grade A dairyman and former county president of Farm Bureau, speak in defense of your criticism of Farm Bureau.

In the first place, policies in Farm Bureau are made by those members who come out to policy meetings and not by Charlie Shuman or other F. B. leaders, as you assume. We have had the greatest participation by the membership in policy-making the past three or four years that we have ever had.

You say "the historic role of the general farm organization is fading." In view of the daily appearance of news items concerning the desires of various commodity groups, most of which, when considered in the light of an over-all farm program, appear ridiculous, I would say if you desire harmony on the farm front, direct your editorials to some of the unworkable ideas presented by certain commodity groups. Urge that they quit their bickering and dissolve their differences in the general farm organization operating in their area for, if these differences were worked out before presenting them to our lawmakers, the confusion you speak of would be less.

Missouri — WM. P. MCCUNE

. . . take processor's view

I cannot agree with your analysis of the worth of general farm organizations as compared with commodity groups. If we have learned anything in the past few years, it is that commodity groups, pulling in scores of different directions, will fail to achieve anything in the way of an effective farm program.

In fact, it would never have been possible for the administration to put across the flexible price support law except for their success in dividing farmers and setting commodity group against commodity group.

The only real hope for farmers is in a general farm organization dedicated to working for the interests of the producer.

Why not get to the bottom of the trouble and point out that the biggest reason why we cannot achieve unity on a dairy program is because so many of the so-called dairy spokesmen are not looking at the problem from the viewpoint of the dairy farmer — too many are looking at it from the processor's viewpoint.

Minnesota — EDWIN CHRISTIANSON, Farmers Union

. . . will meet any group

The editorial appearing in the February 10 issue in which you chide Farmers Union for not participating in the meeting held in Washington, December 19, has its facts confused. Several members have called the editorial to my attention and; after reading it, I find that it presents only part of the picture and leaves an entirely false impression.

The truth is that I told all of the participants in the December meeting that it would be impossible for me to be in Washington on the date of the meeting. I then arranged to meet, the following week, with each of them at times convenient to them. This we did.

On the following Thursday noon I met with the executive vice-president of the National Council of Farmer Cooperatives, the master of the National Grange, and the president of the American Farm Bureau Federation whose board had instructed him not to meet with the National Milk Producers Federation.

Although it was impossible to arrange a meeting of all five groups together, it was possible for us in National Farmers Union to meet with the different groups separately. In fact, we had a very excellent meeting with the officers of the Milk Producers Federation and we were able to stake out several very wide areas of agreement.

I think this plainly demonstrates that Farmers Union is not ignoring the dairymen. Rather, we are constantly trying to represent all of the members who belong to our organization in the most effective manner possible. We will meet with any group in an attempt to secure a sound, constructive farm program.

Colorado — JAMES G. PATTON, National Farmers Union

. . . will never change

Our National (Farmers Union) officers have other things to do besides sit in a chair waiting for someone to invite them to attend meetings called at the other party's convenience.

In my experience I have found the Farmers Union most anxious to cooperate with any sincere group. However, the Farmers Union is realistic enough to know that neither the National Milk Producers Federation, The Grange,

(Continued on page 288)

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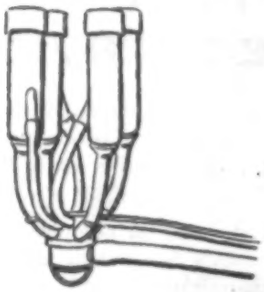

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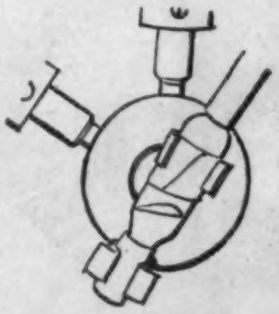

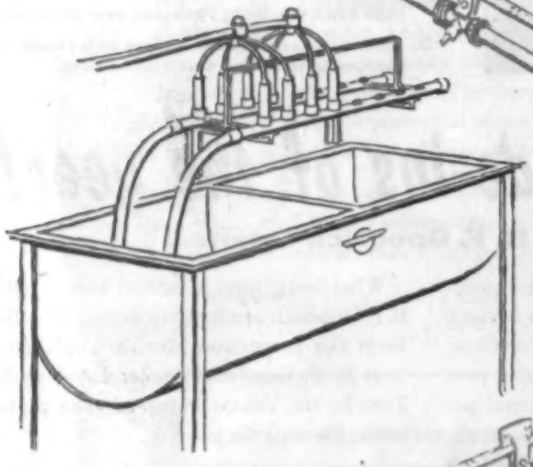

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Opinions, Brickbats, Bouquets . . .

(Continued from page 286)

nor the Farm Bureau will ever change their programs to support the type of program that the Farmers Union members have adopted and instructed their officers to carry out.

Our national officers are committed to a program. They cannot change their direction anytime they see fit, as some others seem to do.

I know you want to be fair. We feel that you should re-examine your editorial and reprint it, stating the facts as they are regarding the position of the National Farmers Union.

Wisconsin — K. W. HONES, Farmers Union

. . . keep it up

I want to compliment you.

I don't know much about Farmers Union, but I know plenty about Farm Bureau. I have been president of our county unit for 2½ years, one year vice-president, membership captain, and at present on the board of my township so I know some of the facts and how they operate.

Keep up the good work.

Missouri — FRED A. DISTLER

. . . to speak effectively

We congratulate you on your straightforward thinking and your courage.

We wholeheartedly agree with your statement that the general farm organization is fading, and a specialized commodity organization must be formed to speak effectively for milk producers.

New York — WILLIAM WALDORF, Dairy Farmers of America, Inc.

. . . warped values

It is most unfortunate that the editors of Hoard's Dairyman lack the good judgment and hold the greatly warped sense of values which forces them to editorialize without understanding a general farm organization, the Farm Bureau organization, or understanding what is involved in achieving a meeting of the minds in an organization that involves over 1,600,000 members that covers all of the 48 states and Puerto Rico.

New York — MARSHALL HAWES

. . . only cooperation

I certainly want to compliment you on the fine editorial. It is unfortunate that national farm organizations such as these two ignore such an important segment of agriculture. We hope eventually the Farm Bureau will wake up to the fact and recognize that only through cooperation with other organizations can a good dairy program evolve.

Keep up the good work.

Minnesota — R. J. HOLMBERG

A matter of taste

In answer to both Mr. Chapin's and Mr. Lindahl's letters in this column, I think they both have a

point but I'm sure no one gets anywhere by calling each other names, or calling butter nasty names.

The fact is that a few years ago butter was made of "ripened" cream. Many recipes for everyday foods call for sour cream which does not mean "dirty" cream or "rotten" cream, and sour cream does impart a unique flavor quite different from sweet cream. We all eat sauerkraut, cheese, cottage cheese, and many other things that have gone through a natural process of fermentation.

We used to have a choice of "sweet cream" butter or "sour cream" butter. Some preferred one; some the other. To me the sour cream butter has more flavor and a better flavor. No doubt, there are many people who would buy more butter if that kind (sour cream) was still available. As far as I know, it isn't made any more.

I have never yet tasted any oleomargarine that tastes nearly as good as butter, be it sweet cream or sour cream.

Oregon HUGH V. HARRIS

We agree . . . —The Editors

For natural foods

I want to congratulate Deston Chapin on his splendid letter (December 10). He is telling the truth all the way. Milk is an almost perfect food in its natural form.

Now this Mr. Lindahl (January 25) jumps up and says pasteurized butter tastes better than natural butter. A candy bar tastes good but it is not good for you. If the consumers were smart and demanded real natural vitamin-rich butter, Mr. Chapin would not have to send it to the east or west coast.

More power to natural foods.

Indiana D. B.

All the flavor out

In the January 25 issue, Ernest Lindahl ("Cow-flavored butter") answers my letter on "hypnotized" butter. It was really a wonderful display of imagination on his part.

In the first place, he changed my meaning of the natural cow flavor of her milk and butter as the cow produces it inside her organs to "barn flavor," which is external dirt and odors.

Secondly, he insinuated that people offered $1 per pound for butter only during the war and on black market. Another flight of imagination. I, knowingly at least, neither bought nor sold anything on black market during the war.

Also, he insinuated I have no respect for country. When Uncle Sam got into the war with Germany, I didn't even wait to be drafted but volunteered and went into the air service.

I have sent butter to California with no reports of maggots. Instead, I received word that they wished they could buy such good butter on the West Coast. And this statement was made when butter was plentiful everywhere.

Very recently a man in a neighboring town offered to bet several men $50 that if they were blindfolded and they let him feed them alternately pasteurized butter and oleo they couldn't tell which was butter and which was oleo. No one took him up.

I asked a well-to-do druggist why he didn't take him up. He replied, "I knew darn well I couldn't tell the difference as this creamery butter has all the good butter flavor taken out."

Kansas DESTON CHAPIN

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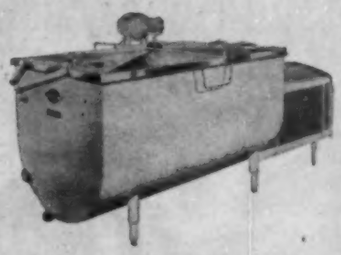
When you eliminate the time and labor of carrying, pouring and can handling... you're putting more profits in your pocket.

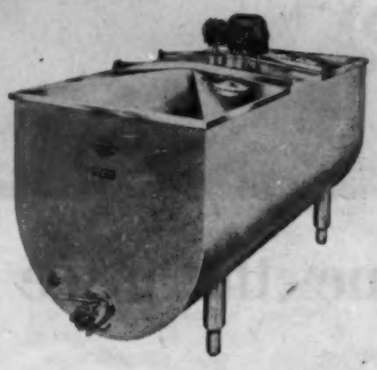
When you don't waste a drop through milk sticking to cans... and when you never have the loss of rejected milk... that means more profits, too!

And when—in addition—you get the absolute dependability that's built into every De Laval Bulk Tank, you've got a one word insurance policy... *De Laval.*

There's good reason why a De Laval Bulk Tank is your best buy... De Laval has had more experience in designing, making and servicing dairy equipment than any other manufacturer in America!



De Laval Self-Contained Speedway Bulk Cooler. Fully automatic operation. 150, 200 and 250 gallon sizes for every-day or every-other-day pickup.



De Laval Speedway Bulk Cooler for remote condensing units—available with or without condensing units—in 300, 400, 500, 600, 800, and 1,000 gallon sizes for every-day or every-other-day pickup.

De Laval Speedway Vacuum Bulk Cooler, 200 gallon capacity for every-day or every-other-day pickup. A De Laval Combine Milker and a De Laval Vacuum Bulk Cooler give you a completely sealed milking system—help cut labor costs. Available with or without condensing unit.

There is a size and style De Laval Bulk Tank to fit your needs. Get all the money-making facts . . . now!

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THE DE LAVAL SEPARATOR CO., DEPT. 14-C, Poughkeepsie, N. Y.

Without obligation, please send me complete information on De Laval Combine Milkers ( ) De Laval Bulk Milk Tanks ( )

I milk about_____cows.

Name_____

Town_____RFD_____State_____

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Step up to this one–the price is way down

BIGGEST *new* trend in automobiles, you may have noticed, is to the work-and-play wagon of the sort you see here.

And it's a right smart move—for this is just about the handiest thing on four wheels.

But an even smarter move is to the Buick Estate Wagon — *for this is the only such vehicle substantially lowered in price this year.*

Take the beauty pictured here.

It's the '56 Estate Wagon in Buick's lowest-priced Series—the SPECIAL. With its big new price reduction, this Buick is right on the heels of similar models of the well-known smaller cars.

So here, for practically peanuts more, you get power galore—from a mighty 322-cubic-inch V8 engine of record-high compression.

You get Buick styling, Buick room, Buick solidity, Buick ride-engineering — and the sizzling new getaway and extra gas savings of Buick's advanced new Variable Pitch Dynaflow.*

With all this, of course, you get the full versatility of the Estate Wagon.

That means four-door convenience and six-passenger comfort.

It means a level and fully covered loading platform in the rear that can hold a small rowboat and camp equipment, to say nothing of the usual things you'd expect such a handy automobile to carry.

You can even have the folding rear seat, at your option, in a split-section arrangement that lets you carry both rear-seat passengers *and* extra-long "freight."

Thing to do, of course, is to visit your Buick dealer and see this wonderful "wagon" — either in the budget-tagged SPECIAL Series, or the custom-styled and supremely powered CENTURY Series. The price news on both is too good to miss—and the fun too fine to pass up. Why not drop in this week?

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*New Advanced Variable Pitch Dynaflow is the only Dynaflow Buick builds today. It is standard on Roadmaster, Super and Century—optional at modest extra cost on the Special.

AT A NEW LOW PRICE—*4-Season Comfort in your new Buick with* FRIGIDAIRE CONDITIONING

HOARD'S DAIRYMAN
Founded in 1885

THIS GRADE A MILK FARM is one of 23 in the Oregon study. Because of higher production per cow, it cost only $2.44 per cwt. (not including feed costs) to produce milk on this type of farm.

A FACTORY-MILK FARM, such as this, produced less per cow. The resulting cost per cwt. (not including feed costs) was $2.53, slightly higher than the costs reported on Grade A milk farms.

Quality milk . . . *does it cost more to produce?*

In this Oregon survey it cost a little less to produce 100 pounds of Grade A milk than factory milk. Per cow costs were $32 higher on Grade A farms.

by D. Curtis Mumford

FORGETTING tradition and prejudice — does it actually cost more to produce high-quality milk than milk of lower quality?

We do not have the complete answer. For certain parts of Oregon, however, we do know that there is no essential difference in the cost of producing high-quality milk and milk of lower quality. Through good management and adequate feeding, resulting in more milk per cow, the dairymen producing the higher-quality milk have overcome or offset the otherwise higher costs of producing Grade A milk.

Detailed financial records were obtained from 54 dairy farmers in western Oregon. The cost study of high-quality and lower-quality milk included all the costs of production except feed. Feed costs, although usually amounting to almost half of the total costs of production, were intentionally omitted. We wanted to focus attention on those items of cost which are usually uppermost in any discussion comparing high-quality milk costs with costs for milk of lower quality.

All information was obtained from the dairy farmers by the farm survey method. All quantities, prices, and values were supplied by the farmers themselves and represent their own judgment and not the judgment of the men who made the survey.

Our suspicions . . .

For a long time we have suspected high-quality milk to be associated with high-quality buildings and high-quality methods. We have suspected, also, that the poor-quality milk would be generally associated with poor-quality buildings and poor-quality methods. These opinions have been supported, at least in part, by results obtained in our study. (Quality of milk in each instance was determined by the number of bacteria found in the milk before it was pasteurized.)

Today we find clean milk being produced under a great variety of conditions, however. The finest and most expensive buildings do not guarantee high-quality milk, although they may be a factor in its production. The cheapest and the most rundown set of buildings does not necessarily result in the production of low-quality milk. A great deal depends upon the dairy farmer himself, upon the particular way he does his work.

Many people believe that it costs more to produce milk of high quality than milk of low quality. Let us see what our study shows.

Omitting the value of feed fed, but including all other costs, the results of this study indicate that high-quality milk costs more to produce than lower-quality milk when one considers the proposition from the two angles of "per farm" and "per cow." But, as we have already mentioned, those farms producing the higher-quality milk (Grade A farms) also had the higher-producing cows.

Considered on a hundredweight basis therefore, it was found there was no important difference in cost between high-quality milk and milk of lower quality.

The most important findings of our study are set forth in the accompanying table.

And now, another finding: There was no clear cut relationship between quality of milk and cost of production on "Grade A" farms and on "factory" farms taken by themselves. For example, in our analysis, as we moved from Grade A milk with a very low bacteria count to Grade A milk of higher and higher bacteria counts, there was no consistent increase or decrease in production costs per hundred. The same thing was true when we examined the production costs of factory milk of higher and lower quality. There was no consistent trend, either up or down.

From these results in Oregon we can not say that **all** factory milk costs as much to produce as Grade A. We can only conclude this: In the Tillamook area where production per cow is lower and where, in recent years, special emphasis has been put on quality, factory milk apparently costs about the same per 100 pounds to produce (omitting feed costs) as Grade A milk. This is true though it cost $32 more **per cow** to produce Grade A milk, where production per cow is higher.

If this study had included feed costs, it is possible the total cost of producing Grade A milk, even on a hundredweight basis, might have been higher than on factory milk farms. This could be true because of the additional feed required to obtain the higher production per cow on Grade A farms.

It is interesting to note that the average bacteria count of all the factory milk sampled was 150,867 (per millilitre, standard plate count, in raw milk) compared to an average count of 36,654 for the Grade A milk. Fourteen out of the 31 factory farms studied (45 per cent) produced milk with a bacteria count actually less than the 80,000 maximum permitted for Grade A milk in Oregon.

Labor costs amounted *(Turn to page 318)*

The author is an agricultural economist on the staff of Oregon State College.

How the costs compared . . .

Item	Grade A farms	Factory milk farms
Number of farms studied	23	31
Average number of cows per farm	35	32
Total milk production per cow (4 per cent FCM)	8,857	7,262
Average value of milk cows, per head	$286	$256
Total hours of labor per cow per year	103	90
Average value of dairy buildings per cow	$237	$130
Average value of dairy equipment per cow	$ 31	$ 22
Average net cost of milk production, omitting cost of all feed:		
Per cow per year	$216	$184
Per 100 pounds (4 per cent FCM)	$ 2.44	$ 2.53
Average number of bacteria (standard plate count in raw milk)	36,654	150,867
Logarithmic average number of bacteria (Standard plate count in raw milk)	12,710	54,090

Farm Flashes . . . .

Seasonal reminders and research notes for the dairyman

BIRDSFOOT TREFOIL HAS A PLACE

Even though there has been some difference of opinion, it appears as though birdsfoot trefoil has a place on soils and in areas where neither alfalfa nor Ladino clover can be grown successfully.

New Jersey studies showed that trefoil yields considerably less than alfalfa on alfalfa soils, but it has compared favorably with Ladino clover under a pasture system of management.

Birdsfoot trefoil is usually more difficult to establish than either of the other legumes, but once established it is a long-lived perennial. It can be used for either pasture or hay. It is more tolerant to acid and wet soils than either alfalfa or Ladino, but does best when the pH is 6 or above. It is only slightly less resistant to drought than is alfalfa.

According to C. R. Skogley, crops specialist at Rutgers University, trefoil should be spring seeded as the only legume in simple mixtures with timothy for hay and with bromegrass for pasture. Late summer seedings without a companion crop have also been successful. Band seeding has shown considerable promise as a method of establishing trefoil.

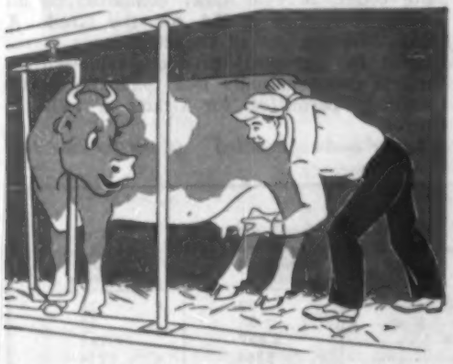
DO YOUR COWS MILK OUT?

How completely — or incompletely — do your cows let down their milk?

A large-scale study at the University of Minnesota showed that improper milking or failure to provide the milking-time conditions that stimulate the cow to secrete enough "let-down hormone" may be bigger factors than inheritance in causing cows to dry up early. This hormone is called oxytocin.

Any excitement at milking time interferes with the secretion of oxytocin. Normally it is secreted by a small gland near the cow's brain in response to a "milking stimulus." This can be through udder massage by a nursing calf, a milking machine, or a human milker.

On the other hand, pricking cows — even gently — with needles completely blocks response. Cows startled this way gave only the



milk already down in their teat cisterns, which was just a few squirts.

It took an injection of oxytocin preparation to get the cow to let down her milk. Mild excitement may partially block this important secretion and result in the cow giving far less milk than normally. Handling the cow roughly, rushing her, not feeding her at a certain time when she has been led to expect feed, moving into a new stall or barn, or anything exciting or over-stimulating can cause the cow to hold back some of her milk.

Therefore, if you are going to get all the milk the cow has in storage, be sure to give her kind and gentle treatment.

WHEN GROUND THAWS, FERTILIZE

If you are wondering when the best time is to fertilize your lawn, most lawn specialists say to do it as soon as the ground is thawed. Fertilizing an old sod will give you a dense, weed-free turf this summer, but hold off until the ground is thawed since fertilizer can't dissolve in frozen ground; it will merely wash off.

G. A. Ziegler, University of Wisconsin, recommends spreading 15 pounds per 1,000 square feet of a fairly high-analysis nitrogen fertilizer such as 10-10-10. Or, you may want to use straight ammonium nitrate or ammonium sulphate. In that case, limit applications to 3 or 4 pounds per 1,000 square feet or you will get nitrogen burn.

Rolling a lawn compacts soil, and it is not recommended unless thawing and freezing weather has made a bumpy surface. If you have to roll your lawn, do it when the ground is moist, but not soggy.

You will also want to reseed dead spots. Rake or spade these up. Then when the ground is frost-free, spread the seed at the rate of 2 pounds per 1,000 square feet. Use the same mixture as your old sod.

For a new lawn, follow a similar procedure. Spread 35 pounds of a 10-10-10 fertilizer and then seed 3 or 4 days later.

Kentucky bluegrass thrives on sunny areas; chewing fescue or creeping red fescue, on shady or sandy soils. If you use a bluegrass mixture, make it predominantly bluegrass.

Merion bluegrass is a new dense and creeping variety, which may help to hold back crabgrass somewhat better than Kentucky bluegrass. It forms a thick turf, is fairly drought resistant, and does quite well in partial shade. While it costs about three times as much a pound as normal bluegrass, you need slightly less seed—1½ pounds per 1,000 square feet.

VIBRIOSIS — SERIOUS SHEEP DISEASE

If any of your ewes abort, separate them from the rest of the flock and have a veterinarian examine them for vibriosis. It is the most common cause of abortion in sheep. The abortions usually occur near the end of the pregnancy period.

Dr. H. E. Rhoades, University of Illinois veterinarian, says that when the disease first strikes, nearly all of the ewes in late pregnancy will abort. As the disease progresses, the number of abortions will decrease until in most cases, 25 to 30 per cent of the ewes in the flock will lose their lambs. Many full-term lambs will be weak and may die soon after birth.

Main cause of the disease is buying infected breeding stock. There is no satisfactory treatment for vibriosis. All aborting animals should be isolated, the pens cleaned and disinfected. Ewes usually recover without treatment and produce a normal lamb crop the next year.

PIGS DO WELL ON PASTURE

Hog producers can reduce the cost of growing and fattening their spring pigs by providing good legume pastures.

Good pasture is an excellent source of minerals, high-quality proteins, and vitamins. Any of the legume pastures such as alfalfa, red clover, Ladino or mixtures may be used. Rape, as an emergency crop or as a fill-in, is also good. If used, it should be sown early at the rate of about six pounds per acre.

An acre of good pasture should carry 15 to 18 growing pigs where they are fed a limited ration. If hogs are full-fed grain, an acre will handle about 20 to 30 head.

E. L. Quaife, Iowa State College animal husbandman, believes that an acre of pasture, well-handled, could be credited with replacing from $75 to $100 worth of other feeds.

Another important factor contributed by good pastures is that of good health for the pigs. Usually when pasture is used in swine production, the hogs are a good, healthy lot. While using pastures extensively and taking a year to make pigs weigh 240 pounds is a questionable practice, producers should use pastures just as far as it is economical.

PASTURE AFFECTS YOLK COLOR

If you are interested in producing quality eggs that consumers prefer, keep your hens confined to the laying house.

An Illinois poultry specialist says that too much grass and green plants cause dark yolks, which are often strong in flavor. Consumers prefer medium-colored yolks with uniform color and no strong flavor. Careful control of the feed eaten by your laying hens will assure yolks which consistently have the desired medium color and taste.

About 8 to 10 days before the yolk is released in the hen's body to become part of an egg, its color is determined by pigments from the hen's diet. These pigments are found in grasses and other green plants, leaf meals, and yellow corn.

In the ordinary ration, dark coloring of the

yolk rarely comes from corn and leaf meals. However, grass and green plants in the diet do cause dark yolks.

Flocks allowed to run loose on pasture have a wide variation in yolk color. Some hens will stay close to the feeders, eating practically nothing but mash and scratch grain. These hens lay medium-colored yolks. Other hens range widely, eating lots of greenstuffs. They lay dark-colored yolks which generally are strong in flavor.

Dehorn your calves . . . when it's easy

Methods recommended are chemical, electric, spoon, and pincher type dehorner. They can be used in this order as calf grows.

by Richard L. Lee

HORNS may have once been fashionable in dairy cattle show rings when they were considered on many judges' scorecards as an important item in a cow's general appearance.

But, more and more, today's dairymen want hornless cows in their milking herds. This trend is showing up in the show rings among the major dairy breeds.

Since all major dairy breeds are naturally horned, except the polled strains, it's up to the dairyman to see that horns are removed. This job is most easily done while still a one-man job. So this means dehorning your calves while they are young and easy to handle.

Use chemicals . . .

When using a chemical dehorning agent, best results are obtained if used while calves are less than 30 days old. Caustic potash is probably the chemical most widely used but caustic soda is equally effective. Either of these chemicals may be bought in the form of pastes, liquids, or sticks and are available from practically all livestock supply companies and drug stores under many different trade names.

When using a chemical dehorner, hair around the horn button needs to be clipped away and the skin brushed to get all loose particles from the area.

Also, the calf you've just dehorned chemically should be kept away from other calves or its mother until the chemical has had time to dry. Otherwise, stock might be injured from licking the chemical from the calf's head.

Another note of caution in the use of these agents is to keep it out of contact with the skin of the person doing the dehorning. Chemical agents can cause serious burns if they do come in contact with the skin.

Caustic material deadens the matrix, or root, of the horn and in a few days, a scab appears over each horn button that soon peels off. This leaves a smooth, hairless spot of skin no larger than a quarter. These spots are soon covered by hair growth and no trace of the operation is to be seen.

Consider electric dehorner . . .

If you've let your calves get over the 30-day mark, then you might want to use an electric dehorner. This method of dehorning works well on calves from 2 weeks to 2 months of age. The hot, electric tool fits over the horn button and firm pressure applied by the operator will remove the horn.

In doing this, you must take considerable care to make the burn deep enough to do the job but not so deep as to leave an ugly, sore wound on the calf's head.

Some brands of electric dehorners have a removable heating unit, making them useful on different size horns. They slip in and out of the dehorner easily, making it possible to dehorn different age calves with the same tool.

Knife-like tool . . .

Another method commonly used to dehorn calves up until they are 2 months old is with a knife-like tool commonly called a "spoon," "gouger," or "tube," depending upon its shape and the manner in which it is used.

When calves are not over 2 months old, the horn buttons are well developed but still so soft and loosely attached to the skin that they are easily removed with this type implement.

If calves have been allowed to go past the age so that any of these tools are impractical to use, the dehorning job can be effectively done with a pincher dehorner. This tool also comes in different sizes to fit different age cattle.

At one time, nearly all of the dehorning was done after cattle were fully grown and a dehorning saw was the most commonly used tool.

Call veterinarian . . .

Only in the case of mature animals with hard, brittle horns is the saw still used. And, if you plan to dehorn fully-developed cattle, it probably would be wisest to get a veterinarian to do the job since he can deaden the nerves around the horn and do the job so that it is nearly painless and bloodless.

It is much more simple to handle and house dehorned dairy cattle compared to horned cattle. Most dairymen find that they can handle up to one-third more cattle in a certain barn area than they could if cattle still had horns.

And, too, among horned cows there is often a "boss" cow that can, and does, easily keep other cows on the run since she has learned to use her horns effectively.

Horn injuries costly . . .

Many times, dairymen have been sickened when a high-producing cow shows up at milking time with an udder ripped open—the result of an attacking cow's sharp horns. Less severe udder injuries from horns are often a cause of mastitis—probably much oftener than suspected.

Also, the safety of the dairyman and his family have to be considered. Horns can cause injuries to individuals from accidental contact with a cow. In the case of a cow attacking an individual, the person is in much less danger if she doesn't have horns.

Any of these dehorning methods can be used successfully on your farm. One or more of the dehorning tools or agents should be placed in a convenient spot near the calf sheds. If done in time, dehorning can be a one-man, inexpensive operation. And, what's easy for you is also easy for the calf.

THE END

The author is assistant agricultural editor, University of Missouri.

CHEMICALS, easiest on calf and dairyman.

ELECTRIC dehorner used up to 2 months.

SPOON works well if the horn button is soft.

PINCHER type comes in several different sizes.

CLIPPERS can be used on any age animal.

How to mechanize hay making

CHOPPING HAY is a simple job compared to bucking a hay loader or lifting bales of hay.

ELEVATORS in all necessary spots make an easy job of unloading and mowing your hay.

. . . from field to hay mow

by R. Bowen

Equipment for making top-quality hay may seem expensive, but when you save all of the green leaves, you will purchase less grain feed.

THE system of hay making and hay handling which a Wisconsin farmer, Milo Larson, developed has taken the labor out of the job—and he is also able to make top-quality hay. This hay making system includes many new ideas which add up to a good over-all working system.

Milo usually cuts his hay between 4 and 5 o'clock in the afternoon. The next day as soon as the dew is off, or about 9 a.m., he rolls the hay into a windrow. In good drying weather, this hay is ready to chop about noon. The hay is chopped rather long. This is accomplished by removing all but two of the knives from the field chopper which normally has six knives.

The author is a rural electrification engineer for the Wisconsin Electric Power Company.

The cut is long and the hay is not destroyed by beating through the blower as it goes through in bunches. There are many field choppers on the market and nearly all of them can be adjusted for a long cut. However, when knives are removed, hay is chopped so long it often gives trouble in a forage blower as the hay is being elevated into the barn. But when the elevator system is used, clogging will not occur.

Saves labor . . .

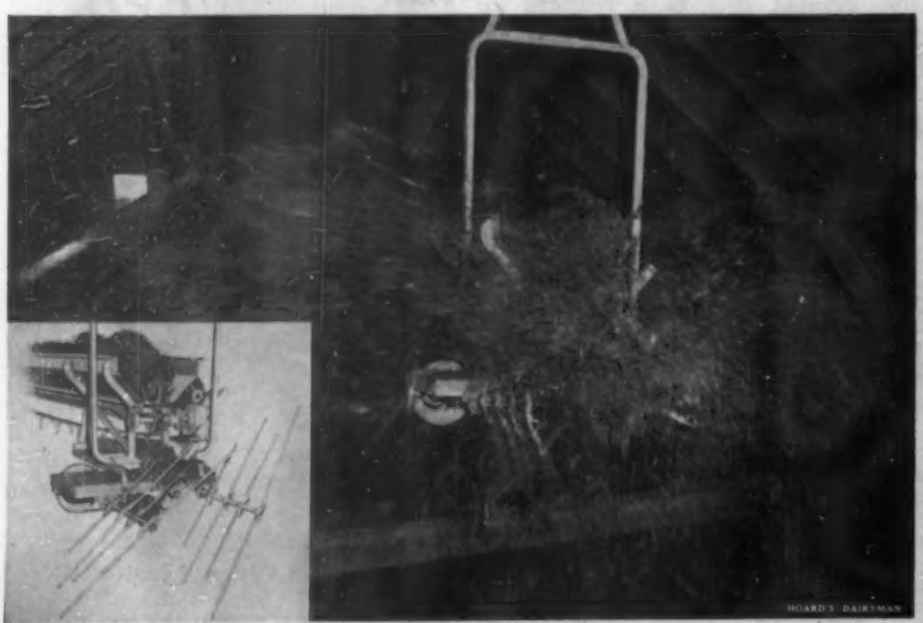
Most farmers realize that a field chopper is the machine which saves the greatest amount of hand labor for the hay making job, if the hay is to be fed to stock on the farm. We believe that farmers who plan to change to field chopping from their present method of hay making should plan to make the complete change and in order to have a successful operation, the following steps and equipment are important:

1. Field chopper to save labor.
2. Mow drier to improve quality of hay.
3. Elevator and conveyor to move chopped hay.
4. Spreader to spread chopped hay.
5. Correct procedure for removing hay from mow.

Some farmers have used a field chopper for hay making, so that they could get relief from the heavy labor involved, but they have given up the practice because they were not able to make high-quality hay. It stands to reason that when hay is allowed to cure in the field, many of the leaves are lost in the chopper loading operation.

A great amount of leaf and stem separation also occurs as the hay is blown into the barn with a conventional type of forage blower. Finally, if the hay is rather heavy, some of the stems become coarse and woody and the cows will not eat them.

The mow drier is a unit which many farmers have turned to in order that the hay can be brought into the barn before it is completely dry so that the leaves are saved. The mow drier is like most devices; it is designed to do a particular job. A system large enough and correctly designed will do a good job of drying, if the right amount of long cut hay is placed uniformly over the drying



SPREADING DEVICE on the end of elevator in top of barn distributes a uniform layer of chopped hay over mow drying ducts below. The two "TV antennas" whirl in opposite directions, spreading the hay. Device is a simple arrangement of gears and is run by an electric motor.

CHOPPED HAY evenly spread over the drying ducks is quickly dried from a 40 per cent moisture content to an amount of 15 to 18 per cent.

ducts. Check size of fan and motor with a competent engineer before installing a new drying system.

A great number of farmers have attempted to spread the chopped hay on the drying system with the forage blower because this is a unit they have used for filling their silos. However, they soon find that spreading the hay in the barn is a different job and the conventional blower does not work too well. Also, it is a difficult machine to move from one location to another. It usually takes more than one man to set up and remove the blower pipes, put on belts, and to unload hay—as well as a man or boy in the hay mow to regulate the blower hood for satisfactory distribution.

If the hay is cut long, as it should be for satisfactory mow drying, it causes a great deal of trouble by clogging the blower pipes. It is also difficult to prevent an extra large bunch of hay from entering the blower. Another thing against it is that it takes a large motor or tractor to run the forage blower.

Tests conducted by the New York Farm Electrification Council in 1952 indicate that forage can be put in the barn at a higher rate with a 3-horsepower motor on an elevator than with most blowers, using a 25 to 30 horsepower tractor.

Elevators have advantages . . .

When we consider all the problems arising from the use of forage blowers, it is rather easy to see why many farmers are looking for a better method of getting hay into the barn. The elevator appears to be the answer because it operates with a rather small motor; a 2-horsepower motor is usually satisfactory. The elevator will not clog if large bunches of hay fall on the feeder.

A conveyor hung on the hay track is an easy means of moving the hay from the elevator to the place where it is to be distributed into the barn on the drier system. The conveyor operates with a 1-horsepower motor and it can be reversed so that hay can be delivered in either direction. The spreader on the conveyor spreads the hay over the duct system loosely so that air from the drier is easily forced through it.

The elevating system does not have an unloading pit, but the chopper wagons have cross conveyors fastened on the front of the wagon so that the hay is taken off with less handwork than is required for unloading from the back of the wagon to the elevator. The wagons are pulled right into position with the tractor. The cross conveyor has a ¼-horsepower motor which is plugged into the elevator circuit so that it can be started and stopped simultaneously with the elevator.

Spreader does the job . . .

The top conveyor, which is mounted on the hay track in the barn, is much lighter than the previous units we have found. It is operated by a single chain which runs faster than the usual two-chain elevator sections. The spreader on this unit looks like two television antennas which revolve in a horizontal position and in opposite directions.

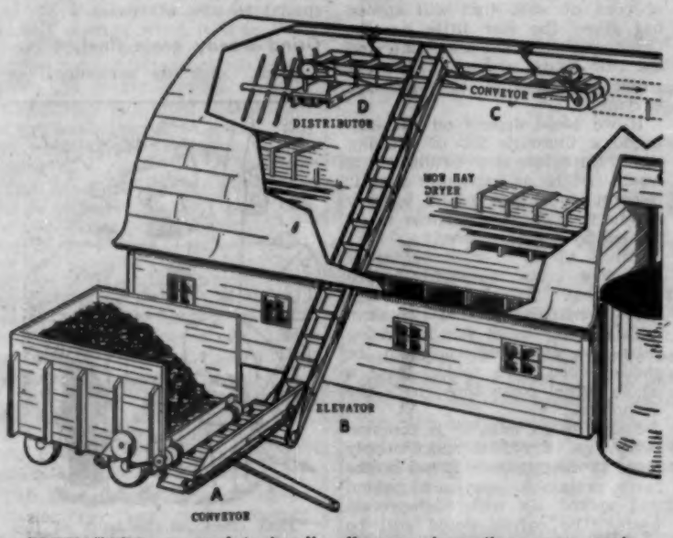
As hay falls onto this spreader, it is spread the full width of the 36-foot barn in a strip about 6 to 8 feet wide. Then, when the next load of hay is to be unloaded, this top conveyor is moved a few feet ahead and the second strip is laid alongside the first strip, and so on, the full length of the mow. Hay spread in this manner piles loosely and dries very quickly.

This Wisconsin farmer, not content with improving his hay making and hay handling methods, decided to develop a better method for removing the hay from the mow. Here is how he solved that problem.

His hay chutes have been removed and he starts a mow by removing the hay from a section around the hay hole. The first mow or part of a mow is worked down almost to the floor. As each section is removed, it is taken out so that only about one foot of hay is left on the floor for insulation.

A large pile of chopped hay, which has been removed from one section, can easily be pushed across the mow if smooth pieces of metal are laid on the loose hay or over a rough floor. This method of removing hay also tends to reduce the dust because the hay falls as a mass and is not dusted up in the process.

As we review the complete procedure of hay making and hay handling, we are impressed with the fact that farmers today are applying the same technique of assembly line production to their farm chores that helped make our industrial plants so efficient. Farmers are gradually becoming aware that their farms can be operated as economically and efficiently as our industrial plants, working on the same basis — more products available to more people at less cost. **THE END**



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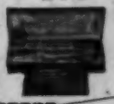

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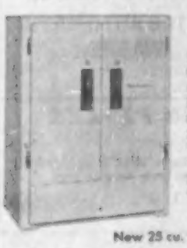

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FEEDING

by N. N. Allen

How should grain be ground?

It pays to grind grains. Usually a medium-fine to medium-coarse grind is recommended, unless there are special reasons otherwise.

MOST of the grain for dairy cows is ground before feeding. The grinding adds expense and work, but it is pretty generally agreed that it pays dividends.

There are a number of reasons for grinding the grain that goes into dairy feed. For one thing, cows are usually hand fed a mixed feed in which different ingredients are blended to give the right proportions of protein, minerals, and other nutrients to properly supplement the forages fed. Using whole grains, it would be very hard to make up a mix that would remain uniform and not separate out when handled.

Then, there are some feeds that are not as well liked as others. These can be ground up and mixed with more palatable feeds so that the cows will eat them without any fuss.

May improve digestion . . .

Perhaps the principal reason for grinding is that the cow will get more out of the grain if it is ground. The cow is a rapid eater, taking little time to chew. As a result, much of the grain is likely to be swallowed whole. It is not serious for the roughage to be gulped down without much chewing. Once she has it stowed away where there is no danger of its being stolen by another cow, she proceeds to bring it back up, a bite at a time, and to chew it leisurely and thoroughly.

Some of the kernels of grain will come up with the roughage, and will also be well chewed, but many of them will have settled to the bottom of the paunch to be washed out with the fluid and finer material.

Jacketed and well protected by their outer skin, some of the grain will travel the entire length of the digestive tract to appear in the droppings in condition to sprout and grow. Needless to say, a grain of corn or oats that will sprout has given the cow little benefit. Grinding breaks the seed coat, and the raw starch and protein is exposed to action of the digestive enzymes.

If we could depend on the cow to do a thorough job of chewing the grain before it is swallowed, it would not be as important that it be ground. Grain ground by cow power is just as digestible as if ground by tractor power.

Calves up to 5 or 6 months of age chew grain thoroughly before swallowing. In the days when heavy feeding of protein rich skim milk was the usual way of raising calves, we often fed whole oats or shelled corn, and seldom saw a whole kernel come through in the droppings.

Skimping on milk as is common today, the dry feed must supply more protein than is found in the home grains, so they are ground and spiked up with high-protein feeds. The calves would still be glad to do the grinding, but the mixing goes much better if the grain is first ground.

Fine grinding not necessary . . .

Most of the questions we get are not concerned with whether the grain should be ground, but rather how it should be ground. Should it be fine or coarse, or would crushing be better?

In general we can say that we do not have to be too fussy, since there is a rather wide range which will give satisfactory results. If a grain of corn were merely broken into four or five pieces, it would digest much better than if left whole, but there might still be good-sized bits of grain coming through.

The enzymes are going to work largely on the surfaces. Meanwhile the pieces are traveling steadily through the intestines, and may reach the end of the road before the job is completed. Suppose each of the large pieces were broken into four or five, the surface would be much greater and the depth much less. Travelling at the same rate, there would be ample time for complete digestion.

Going to the other extreme, if we grind the feed to a very fine meal or flour, the results are not the best either. It takes much more power to grind to this degree of fineness, and the feed will be very dusty to mix and handle. Cows do not like a fine, floury feed which gums up in the mouth, and the digestion is not as complete as for a feed ground to a medium-fine, or gritty state. The flour-like feed probably tends to form wads of dough through which the liquid bearing the enzymes does not percolate as it would through a mealy mass.

Between the two extremes, neither of which would give the best results, there is a fairly wide range which is satisfactory. We usually recommend a medium-fine to medium-coarse grind unless there are special reasons otherwise.

Grind weedy grain finely . . .

Feeds, such as screenings, or

"That creek in the back of the barn. It behaves itself?"

even grain as threshed, often may contain fine weed seeds which are sure to go through the animals in growing condition if eaten whole. Such feeds should be ground very finely to destroy the small, hard shelled weed seeds. The ground grain will be finer than we like, but this is the lesser of two evils.

Any other grain used in the mix may be ground coarser than usual to help lighten up the feed, or bulky mill feeds such as bran may be used. Then we can spread the feed over the silage at feeding time to make it more appealing to the animals, and to keep it from becoming doughy in the process of eating.

How about crushing or rolling?

A crushed or rolled grain is fully as digestible as if ground. Actually the crushed feed is pretty thoroughly broken up, but is held together by the outer skin of the seed which is not as completely destroyed as when the grain is ground. The animals seem to like the consistency of the crushed grain, and it is preferred over ground grain by many who are feeding heavily to cows on production test, or to cows being fitted for showing.

Most feeders probably do not need to worry about such differences. If the cows are cleaning up their feed and trying to steal from their neighbors, no special preparation is needed.

Calves have individual houses

Dairyman Wallace Lindskoog of California uses an individual calf rearing house that is different from most.

It has an aluminum roof which reflects the heat from the outside, leaving the inside cooler than when

FEED BOX is fastened along one side of the house. Box for the milk pail is placed on left side.

other materials are used. During colder weather it reflects the body heat of the calf inside, keeping the calf warmer when it is in the house. There is no deterioration and the aluminum makes the unit lighter for easier moving.

Lindskoog's individual calf houses do not have the usual house and pen combined. The pen has been eliminated.

The house is 4 x 4 feet; the roof is 44 inches high at the front and 40 inches at the rear. The front of the unit is open, while the rear and sides are boarded solidly. The calf is fastened to a front corner by a chain. This gives it access to the house and a 10-foot circumference outside in which it can travel.

A manger is fastened to one side of the house. A third of it is used for grain, the rest for hay. On the other side is a box which holds a milk pail, set at a height convenient for the calf to drink.

This house allows calves to have exercise, gets them used to being tied, and helps break them to lead.

—F. Leland Elam

Here's a *LOW-COST* Forage Harvester for Standing Hay or Windrowed Crops...

The new John Deere No. 10 Chopper is shown above chopping standing alfalfa and clover and, at right, picking up and chopping windrowed hay.

Dollar for dollar, the versatile new John Deere No. 10 Rotary Chopper may well be the best investment you've ever made. This big-capacity, low-cost chopper harvests standing hay and windrowed crops . . . handles many other jobs.

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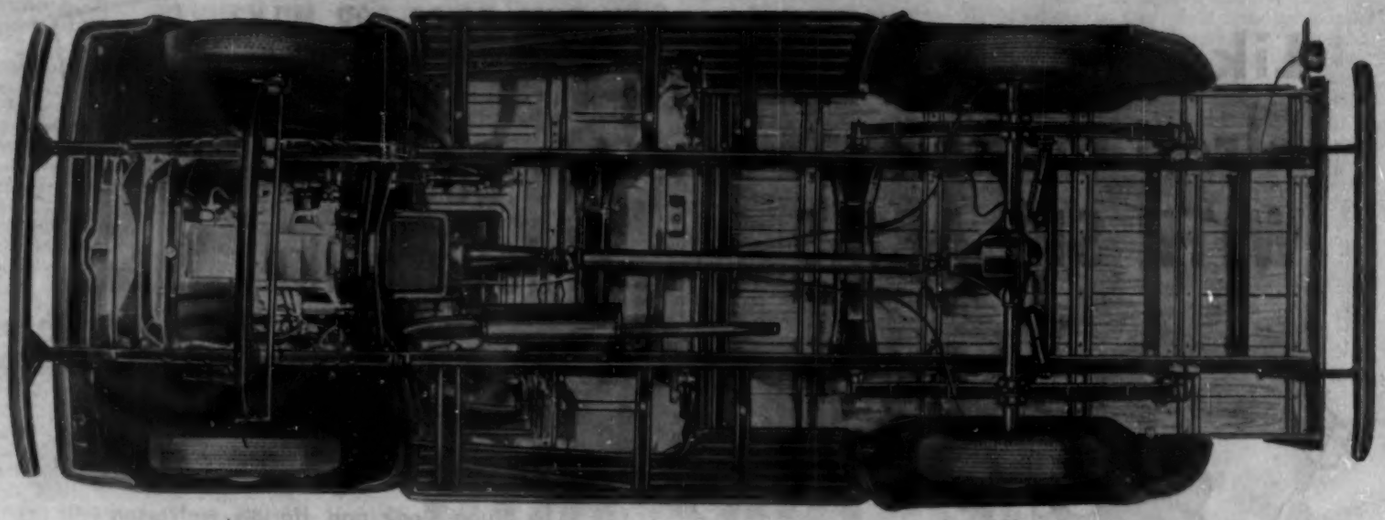
Most Comfort! New cab! It's DRIVERIZED! Only Ford has it! New wrap-around windshield with built-in visor. Exclusive seat shock snubbers . . . Custom Cab (available at worthwhile extra cost) includes 5-inch foam rubber seats.

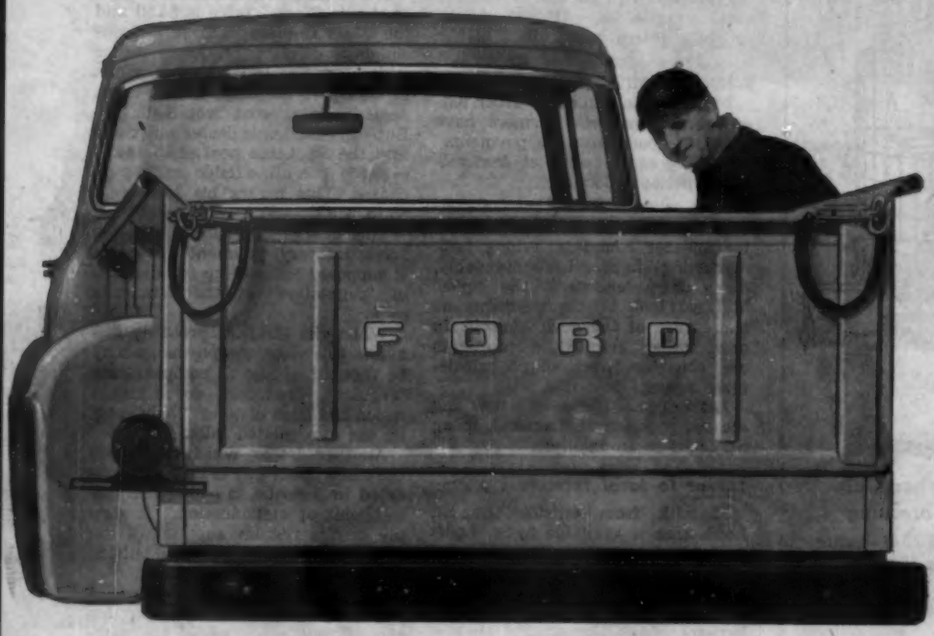
Compare it! Compare it with *any* other Pickup, and you'll see why you get the most Pickup truck for your money in a new Ford for '56.

Compare *power* and *capacity*, for example. When you do, you'll find the new Ford Pickup gives you more horsepower per dollar than any other Pickup (based on comparison of net horsepower with suggested list price). You'll



Bird's-eye view (left) shows the extra capacity you get in the 8-ft. box now available on Ford half-tonners. *Worm's-eye view* (above) shows rugged truck construction throughout, with wide-tread front axle, rugged parallel rail frame, tubular drive line and husky hypoid rear axle.

Pickup truck for your money



also find that Ford's new 8-ft. box offers more cu. ft. capacity than any other Pickup in the 5,000-lb. G.V.W. Class (6½-ft. Pickup box standard on 110-in. wheel base).

Compare *safety* and *comfort*. You'll find that Ford gives you Lifeguard features available in no other truck. You'll find the new Ford cab is in a class by itself for comfort and convenience. It's DRIVERIZED! Only Ford has it!

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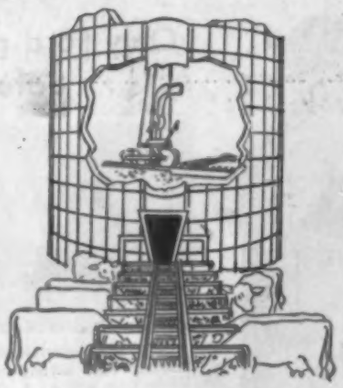

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WHY THIS PRICE FOR MILK? Article No. 4

St. Louis erects a dollar dike . . .

. . . to protect its market from being flooded with milk from surplus-producing Upper Midwest. Here is an example of the use of "compensatory payments."

by Hugh Cook and Harlow Halvorson

YOU have read in previous issues how milk is priced in Chicago and Boston. Basically, Class I prices in Chicago are built up from manufacturing milk prices. In Boston, Class I prices are tied to city prosperity and costs of production. There are many other factors but, essentially, there is the nub of the difference in the two markets.

Now let's move to another federal milk marketing order area. In St. Louis, farmers are between the surplus-producing Midwest and the milk-deficit South. Think, for a moment, what this can mean.

Here you sit with a pretty fair market. Prices are reasonably good in normal times. But let milk production boom to the north and the surplus spills over to St. Louis, dropping prices drastically.

How are you going to protect yourself from feast and famine?

In St. Louis, and many other federal order markets, farmers have voted in "compensatory payments" as a dike against market demoralizing, periodic flooding.

Now when we mention compensatory payments, we ring the gong for another round in a long milk marketing fight. Understandably, many dairy leaders in the Upper Midwest look at the payments as a creature of the devil himself. In most other areas, the payments are considered a tool of self-defense against injustice.

Let's dig a little deeper now and see the problem at firsthand, using St. Louis as an example.

Threat to local farmers . . .

If milk from outside the St. Louis area is available to St. Louis dealers at less than the classified prices, it obviously is a threat to the regular area farmers. It may also be a threat to orderly marketing.

This threat takes the form of more milk in the pool. If outside milk replaces part of the regular milk supply, this displaced part will probably be manufactured into a product (butter, cheese, and so forth) with a lower-use value. This drops the total value of the regular milk pool **and the blend price** to St. Louis farmers.

Because of this, so-called "unregulated" milk may threaten the classified pricing system itself. And classified pricing is the heart of the federal order program.

Now to the basic question: Do nearby producers have a prior claim on the market?

Because of their location they naturally have an economic advantage and get higher prices.

If however, outside milk is offered at a lower price **on a regular basis,** the authors believe local producers should accept the price competition.

In practice, regular producers, through the federal order, force handlers to pay a specified charge into the pool for every hundredweight of outside or "unregulated" milk. This generally makes this milk so expensive to the handler that he doesn't use it unless he must.

How "payments" work . . .

For example, let's assume the St. Louis Class I price is $4.50 and the Class II price $3.35. A Wisconsin dairy offers a St. Louis dealer milk at $3.50. If it costs 50 cents to transport the milk, the St. Louis dealer's total cost would be $4. But—the St. Louis dealer must pay into the St. Louis pool $1.15 ($4.50 —$3.35) for all outside milk purchased. This makes his total cost $5.15. He doesn't buy the milk.

This charge of $1.15 is called a "compensatory payment" since it is supposed to make up for the lack of "regulation" of the Wisconsin milk.

While the U.S.D.A. probably disavows this view, the payments may be thought of also as compensating "regular" producers for damage which has been done to "their" pool by the unregulated milk.

Another device, which has about the same effect but is more complicated to describe, is called the "assignment of classification." It simply credits regular supplies to the highest use classes and the outside milk to the lowest use classes.

In all this there is the view that regular producers are essential for the efficient operation of the market. These, then, are the producers whose milk should be regulated fully pooled, and priced.

Handlers and producers who wish to sell milk in the market are free to do so. They cannot do so, however, in a way which displaces the regular and essential producers. However, if the milk supplies of non-pool plants and producers become regular enough, these plants will soon be regulated and participate in the pool.

There is no question but that compensatory payments do keep unregulated milk off the market. In

fact, some orders may be unduly restrictive. Each case must be examined on its merits.

The St. Louis market is one of several in which the basic thinking on compensatory payments has been written into federal order hearing decisions. The following paragraphs show how the compensatory payments fit into the order:

Federal Order No. 3 for the St. Louis, Mo., milk marketing area, has been in operation since 1936, but milk in the area has been priced under some form of government regulation since 1933.

Only two classes . . .

Two classes of milk use are recognized in the St. Louis order, Class I and Class II.

In general, Class I consists of so-called "ordinance products" or products which must be made from inspected milk supplies. These include whole milk and skim milk, flavored drinks, and cream.

Class II includes butter, cheese, and other manufactured products.

Milk in the two uses is priced in relation to a "basic formula" price which is modified by a variety of factors. The "basic formula price" is figured from the price of milk in manufacturing uses and is the higher of two alternatives:

1. The average price paid by approximately 17 condenseries located in the midwestern United States.

2. The price obtained by applying a formula to the Chicago 92-score butter and the Chicago spray and roller powder prices.

Handlers who sell milk in a Class I use must pay a Class I price for it. In St. Louis, the Class I price for 3.5 per cent milk is as follows:

Basic formula price + the seasonal differential, + or − the utilization percentage adjustment (supply-demand) = Class I price.

Class I premium is $1.15 . . .

The basic premium paid for market milk may be considered as $1.15 per hundredweight. To encourage producers to level out milk production during the year, 30 cents is added to the premium in the fall and 45 cents deducted from it in the spring. The net result is a set of premiums, as follows:

December through March, July and August	$1.15
April, May and June	.70
September, October, and November	1.45

When there is too much milk . . .

For each percentage point that production differs from 125 per cent of Class I sales, there is a price adjustment of 1 cent during April through June, 3 cents for September through November, and 2 cents for all other months.

For Class II milk, from August through February, handlers pay the "basic formula price" less 6 cents. For all other months handlers are charged on the basis of a different formula, using the Chicago 93-score butter and Chicago spray powder prices.

The order also includes the usual butterfat and location differentials.

Use market-wide pool . . .

Since August 1953 the St. Louis market has had a market-wide pool. For many years prior to this, the market had been on an individual handler pool.

The market-wide pool is designed to equalize the prices received by producers at given locations. But it doesn't work too well in allocating supplies of milk efficiently among handlers. However, some handlers have argued that the individual handler pool discouraged additional necessary supplies and producers were not in favor of it.

The value of milk in the pool is the value of producer milk in each of the classes plus several adjustments. The main adjustment is for other source milk; that is, outside milk or milk not supplied by regular producers.

For milk from other sources not under federal order, handlers must pay a premium or compensatory payment which for March through July is the difference between the Class I and Class II prices. For August through February it is the difference between Class I and the uniform price.

In the St. Louis Order the line of reasoning on outside milk is basically:

1. It costs more to produce high quality milk.

2. Only an amount necessary to provide an adequate and dependable supply should be encouraged. To produce more would be wasteful.

3. Class I prices should not be any higher than necessary to get the minimum adequate supply from regular and essential producers.

4. Thus, the marketing rules must provide for the sharing of Class I sales among these regular and essential producers.

5. In order to do this, equalization of sales should be only to plants that meet reasonable performance standards in supplying milk to the market. Any plant may participate so long as it meets these reasonable standards.

6. Milk not produced primarily for the market and not pooled can be sold in the market but not in a way which lowers the value of the pool for the essential and regular producers. The compensatory payments described above are aimed at achieving this.

In the next issue, we will take a look at the Louisville, Ky., and Detroit, Mich., markets. They will provide examples of markets that use price incentives to level out seasonal milk production.

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How competitive pricing in transportation would help you

In most American businesses, the benefits of greater efficiency can be passed on promptly to the public. In the transportation business, however, this is not always the case.

Consider what has happened on the railroads:

In the last 30 years the speed of the average freight train has gone up more than 50 per cent; the load has nearly doubled and the hourly output of transportation has increased nearly three times.

To make possible these and other gains in efficiency, the railroads have spent, since the end of World War II, nearly $11,000,000,000—every dollar of which was financed by the railroads themselves.

But — as is shown in the report of a special Cabinet Committee appointed by the President — government regulation frequently denies to the public the benefit of the lower costs of the most economical form of transportation, so as to protect the traffic and revenues of carriers with higher costs. The result, as the Cabinet Committee says, is that shippers and, ultimately, the consuming public must pay more for freight transportation than would otherwise be necessary.

What can be done to correct this unhealthy situation?

The special Cabinet Committee recommended that railroads and other forms of regulated transportation be given greater freedom to base their prices on their own natural advantages. At the same time, government regulation would continue to prevent charges which are unreasonably high or unreasonably low, or are unduly discriminatory.

This would make it possible to pass on the benefits of the most efficient operations to shippers, producers and retailers, and to the consuming public which in the end pays all transportation costs.

Bills based on Cabinet Committee recommendations have been introduced in Congress. For full information about this vital subject, write for the booklet, "WHY NOT LET COMPETITION WORK?"

Association of American Railroads
Transportation Building, Washington, D. C.

Apply trace elements
. . . needed on your farm

Iron, zinc, copper, manganese, and boron — these are the major trace elements that are essential for all plant growth.

by A. J. Ohlrogge

DO OUR soils take care of the plant's requirements for these trace elements? To answer this question, we asked the state agronomist in each of the Midwest states these questions. What minor elements were deficient? Where were they deficient? What crops suffered the deficiency? In what kind of soils were the deficiencies found? Here is a summary of their answers:

Boron . . .

Wisconsin reports widespread boron deficiencies in alfalfa. Alfalfa is the most sensitive of the field crops to boron supplies; therefore, it shows the shortage first. Nearly 60 per cent of the alfalfa in Wisconsin shows too little boron some time during the growing season.

The main area is the southern half of the state, although scattered deficiencies also occur in the northern half. This lack of boron is found in both the light and heavy soils which are well drained and light in color.

Boron deficiency is widespread in Michigan. Sugar beets show it in the heavy-textured, dark-colored, poorly-drained soils in the sugar beet growing area of the eastern lower peninsula. Scattered over the southern half of the lower peninsula, alfalfa also shows the lack of boron.

The stories from Illinois and Indiana are about the same. In Illinois, alfalfa shows a deficiency of boron on both the light-and heavy-textured soils which are light colored. The same is true for Indiana with greatest concentration in the southern third of the state and the northern third of the state.

Iowa and Ohio report very few boron deficiencies. In Minnesota, along the Wisconsin line and central area, it occurs, and in Iowa the deficiencies are very few but those found are scattered on the lighter soils in the state.

The shortage of boron in alfalfa is characterized by yellow tops and stunted plants. This lack of boron is easily confused with insect injury. The correction for it is simple, 20 to 30 pounds of borax per acre in addition to your annual top-dressing of phosphorus and potash, such as an 0-10-30B fertilizer on alfalfa will correct the need.

Manganese . . .

Manganese ranks about second in importance as a deficient trace element in the seven-state region. One of the largest areas of deficiency occurs in the heavy-textured soils of northwestern Ohio which extends over into Indiana and continues on up into Michigan along the lake. On these heavy-textured soils, manganese shortages are prevalent on soybeans, alfalfa, sugar beets, oats, and wheat.

BORON DEFICIENCY stunts the growth. Alfalfa on the left received 30 pounds boron per acre.

The Kankakee River basin of Indiana, which extends on over into Illinois is another large area of manganese deficiency. Here on the light-textured, dark-colored soils, manganese shortages become prevalent as the pH gets up near and above 6.5.

Indiana also reports that all of their depressional soils, high in organic matter, are potentially short of manganese no matter where they occur in the state, if they are limed above pH 6.5.

In Wisconsin, manganese deficiencies are concentrated in the small area in southeastern Wisconsin. This occurs over a wide range of soil types growing vegetable and field crops.

This lack of manganese can be corrected either by foliar sprays of manganese sulphate or by additions of manganese to the fertilizer applied to the crop.

Iron . . .

The only iron deficiency on the field crop has been reported from Iowa. In North Central Iowa, soybeans on the normally poorly-drained soils show shortages of iron some years. This is corrected by a foliar application of iron.

Copper . . .

Michigan, Wisconsin, and Indiana report copper deficiencies. The shortage is limited to the mucks and peats of Michigan. Both the vegetable and field crops show it. Some of the crops are carrots, oats, chard, table beets, onions, alfalfa, lettuce, and sudan grass. Most of the deficiency is found on the peats which are below pH 6.0 in acidity. This lack of copper in Indiana is also limited to the organic soils of the northern part of the state.

Zinc . . .

Zinc deficiencies have been reported for two crops: Onions

growing on muck in Michigan, and corn in southeastern Wisconsin. The zinc response in Michigan is rather widespread on the mucks, whereas the corn response in Wisconsin is very scattered and only a few cases of increases have been obtained. All other states report no verified cases of zinc shortage.

Molybdenum . . .

Molybdenum has not been recognized as an essential trace element. Responses to molybdenum are widespread in some countries like Australia and the Netherlands. In the United States, on the eastern seaboard, molybdenum deficiencies on some vegetable crops have been reported.

Wisconsin is the only state reporting showing some response to molybdenum applications. On a few scattered fields in the eastern half of the state, molybdenum responses have been obtained on alfalfa, peas, and potatoes. It is on the acid soils, where shortages of molybdenum occur; liming oftentimes corrects this. Molybdenum truly is a trace element, since only an ounce or two of molybdenum needs to be applied to correct the deficiency.

Secondary elements . . .

Calcium, magnesium, and sulphur are also essential elements required for plant growth. What is the situation in regard to soils of this seven-state region?

Calcium deficiencies are corrected by liming, and no agriculturally significant calcium shortages have been reported. They can be found on extremely acid sandy soils; however, these are only very localized in extent.

Magnesium, required by plants, is also found in some limestones. The dolomitic limestones carry magnesium requirements. However, in certain areas magnesium deficiencies exist. The states having deficiency areas of importance are Wisconsin, Michigan, and Ohio, and to a lesser extent in Indiana and Illinois.

A lack of magnesium is common in the northern half of Wisconsin. This occurs on the acid potato soils. The crops affected are potatoes, red clover, alfalfa, beets, corn, and peas. The deficiency is much less common in the southern half of the state.

Like Wisconsin, Michigan has scattered magnesium deficiencies all over the state, but it has a high concentration on the tree fruits growing along the shore of Lake Michigan.

The absence of reported deficiencies in your area does not necessarily mean that none exist. It merely means that the chances are rather remote that a deficiency exists on your farm. However, if you think you have a trace element shortage, contact your county agent and your local experiment station to obtain verification and identification of your trouble.

It is a pleasure to acknowledge and thank the state experiment station agronomists who cooperated in this survey. They are:

Dr. H. J. Mederski, Ohio
Dr. S. Melsted, Illinois
Dr. R. L. Cook, Michigan
Dr. K. C. Berger, Wisconsin
Dr. J. M. MacGregor, Minn.
Dr. A. J. Ohlrogge, Indiana
Dr. John Pesek, Iowa

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Here's the easiest handling rake you've ever seen!

It takes only a few minutes to attach the Ford Mounted Side Delivery Rake to any Ford Tractor; then you can just "pick it up and go." Nothing to slow you down when going to and from the field. And when raking, you can quickly lift the rake over obstructions . . . make short turns without cramping . . . rake cleaner on the curves . . . back into tight spots easily. But that's not all.

Gentle Raking Action Saves Leaves. **The Ford Side Delivery Rake moves hay a shorter distance from swath to windrow than ordinary side rakes. There's less whipping, less tossing of hay. It handles hay *gently* while you rake at faster speeds. And its extra width gets all the hay with ease, placing the raked hay on top of the stubble for faster curing.**

Two-Speed Drive, Tractor Powered. **In addition, this rake is PTO-operated and it has a two-speed drive—use tractor high gear for most raking or the next lower gear for dry hay and rough ground. By raking faster where conditions permit, you save valuable time, prevent over-bleaching of the hay and get your hay out of the weather sooner.**

Sealed Bearings Lubricated for Life. **You save time and bother "greasing up," too—there are only four grease fittings to be serviced on the entire rake. The tooth bars run on ball bearings and they are sealed for life. It's the smoothest running rake you've ever seen!**

You'll Have to See It! **And there's much more—such as the exclusive four-blade rotor that strips hay cleaner, replacing the usual stripper bars. So stop in and see the mounted Ford Rake at your Ford Tractor and Implement Dealer's. Look over the new, smooth-running Ford Mowers, too. Then try them on your own farm without obligation. Find out for yourself how much *easier* and *faster* hay making can be!**

Tractor and Implement Division, Ford Motor Company, Birmingham, Michigan.

Gets to the field fast. **Notice how this rake is carried by the tractor—nothing drags behind to slow you down. That's why you can travel to and from the field at faster tractor speeds. And since no part of the rake touches the ground, the entire rake is protected from the severe shaking, wobble and vibration to which pulled rakes are subjected on the road.**

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EDITORIAL COMMENT

TEST TO MOVE INTRASTATE

MILLIONS of our tax dollars are now being spent to control and finally stamp out brucellosis. Fortunately, there is comparatively little infection left. Thanks to vaccination, testing, and removal of reactors, most states are in pretty good shape.

Remaining in all states, however, are many pockets of infection. These contain the seed for flare-ups and spread of the disease.

Recently, we were shocked to learn that several states still do not require a negative test for the movement of cattle within the state. They may impose very strict requirements on cattle coming in from a neighboring state. Within their own borders, however, diseased cattle can move with abandon to reinfect clean herds and undo much of the good that has been done.

How do these states rationalize such a flagrant neglect? How do farm and livestock organization leaders excuse the absence of even such a simple, fundamental precaution?

All of us shudder at the prospect of international germ warfare. We are spending huge sums on research and preventive techniques to protect our human and livestock populations should such warfare develop.

Yet here, within some of our own states in this country, we allow the spread of livestock disease through the unrestricted movement of possibly diseased cattle.

Can the federal government justify the expenditure of federal funds in states where even the most basic disease control practices are ignored?

TWO-PRICE FOR DAIRY

WHEN The National Grange met in annual convention recently it recommended the "use of two-price or multiple-price, self-financing measures for such commodities as can use them."

As the Grange leadership well knows, a two-price program is eminently well-suited to the dairy industry. The executive committee received such a proposal almost two years ago and gave its verbal support. The question we raise now is why has the Grange been so negligent in promoting a two-price dairy program for these many months? After all, the dairy industry is the largest segment of American agriculture. Certainly it deserves priority consideration in the development of a farm program.

We understand the Grange has received additional financing for the work of its national office. Perhaps now it will have the facilities to put its convictions into action. If so, it can make a great contribution to American dairy farmers.

JUGGLING THE PARITY FORMULA

PARITY as a yardstick of equality is rapidly becoming a mockery. Every fair-minded person has known that parity based on the 1910-14 price relationships is inaccurate and misleading. Even Congress recognized this a few years ago when it provided for a gradual transition to modernized parity.

Today, however, we find the same Congress trying to dig out the old parity and use it for price support operations when it yields a higher figure than modernized parity. To us, this is a cowardly act.

If Congress wishes 100 per cent of parity for a commodity, why doesn't it say so and attempt to set its price support operations on the basis of 100 per cent of modernized parity? Why deliberately attempt to mislead us by digging up an outmoded formula which will provide the same price but which can be talked of as being 90 per cent of parity?

We have long recommended the adoption of a realistic parity formula which yields a product that means something under today's conditions. Just when a constructive move is made in this direction an effort is made to turn back the clock 42 years.

Soon the idea of parity will be thoroughly discredited. It will mean nothing to farmers, nor to the public. We will have lost the value of the only widely accepted yardstick of agricultural economic health.

THIS IS PRODUCTION CONTROL

THE Soil Bank has been widely accepted as a major part of a desirable peacetime farm program. Conservatives and liberals alike have endorsed it, squabbling only over some minor provisions. The principle has received overwhelming support.

We wonder if this support would have mushroomed had the plan been called a "production control scheme." Actually, that is what it is.

It is truly remarkable how we tailor our response to words. When we speak of production control it is like waving a red flag before the great majority of people. But when we use the term "soil bank" these same people nod a smiling assent.

During the 30's we had a soil bank type program, too. It was kicked out in the courts and subsequently dressed up to be called a conservation program, but the same principle was involved.

We should be wary of worshipping words. Similarly, we should avoid condemnation of programs because of the word association which may be attached to them.

It has been difficult for us to understand why the nation's press and business leaders have fought production control in agriculture. All major businesses follow production control in their own operations. For example, the automobile manufacturers today are cutting back production because they do not have a profitable market for all the cars they can produce.

Only because farmers are unable to tailor their individual production to the market available does the government step in and attempt to act as a balancing agency.

In 1915, W. D. Hoard said:

LOOK AHEAD

Some of our most successful businessmen are those who have built for the future. They looked ahead and decided that if their business was to be a lasting success, they must, in so far as they were able, plan for the future. We have an old axiom, "Don't cross a bridge before you reach it," but this is hardly true of successful business. The bridge must be built ahead of time or it will not be ready when the business needs it. It means spending a few dollars and a few hours now but it does not mean a waste of time and money; on the contrary, it is a good investment.

CROSSBREEDING AWAITS PROOF

WITH about the same regularity as an epidemic of stomach flu, comes periodic promotions of crossbreeding dairy cattle. Usually these are sparked by a glowing article in the farm press. Long-time readers of Hoard's Dairyman know the history of crossbreeding in this country. New readers may not be so informed.

Many claims and counterclaims have been made for and against crossbreeding. We believe there has been truth and merit to a degree in the arguments for both sides. Before recommending crossbreeding as a statewide or nationwide breeding policy, however, we should have conclusive research evidence of the benefits and dangers, if any, resulting from the practice.

Thus far, the major crossbreeding project reported is that conducted by the U. S. Department of Agriculture at Beltsville, Md. It will be recalled that the experimental procedure followed there was severely criticized because of the lack of controls, the selection of the foundation dams, and the conditions under which the records were made. In our opinion, it was a demonstration, not a well-controlled research project. Certainly it did not provide enough conclusive evidence to justify recommending crossbreeding as a national dairy breeding program.

To the best of our knowledge, the only dairy crossbreeding research project conducted with control animals is now being carried on by the University of Illinois. Wisely, the Illinois research workers have not publicized their preliminary findings. They are waiting until they have conclusive evidence before jumping into print.

Crossbreeding captures the fancy of many farmers because they immediately associate it with hybrid corn; crossbred hogs, beef cattle; and hybrid chickens. Why not derive the same benefits in our dairy herd?

If we did not save our crossbred heifers for breeding purposes, as is the case in other species, there could be merit in the comparison. But in dairy cattle we do save these heifers for breeding purposes. There is some evidence from Beltsville that deterioration can be prevented in subsequent generations by the use of purebred sires. We are frank to admit that we would prefer to see these results verified by well-controlled research.

We do not condemn crossbreeding as such. We are critical, however, of those who picture crossbreeding as providing benefits which have not been proved under reliable research projects. The responsibility is great when you influence or set breeding policy. Evidence must be beyond question. To base recommendations on anything less is indefensible and irresponsible.

$55 MILLION SAVED

"We are greatly pleased with the progress made in the national brucellosis eradication program. It is especially gratifying to know it has saved the cattle industry no less than $55 million each year as a result of the reduction of the disease thus far. Thousands of people are now living normal, healthy lives who would otherwise be suffering from the effects of brucellosis."

—H. F. Wilkins, President
U. S. Livestock Sanitary Assn.

INDIVIDUAL RECORDS are kept in notebooks. Each envelope holds registration certificate, pedigree, breeding slip, and I.B.M. record.

We like this record system

by Erwin J. Benne

KEEPING accurate records of a dairy herd requires some kind of system that is convenient to use and provides necessary information when needed. This is especially true in purebred herds where artificial insemination is practiced, since breeding slips, certificates of registration, and pedigrees vary so much in size and shape that they do not fit well into one kind of cover.

My family and I devised a simple, inexpensive system of record keeping that has worked so well with our own herd that we thought it would be of interest to other herd owners.

We cut off the upper end of 9- x 12-inch envelopes, one for each animal in the herd, and punch holes in one edge so they will fit into ordinary 2-ring notebook covers. We put the animal's name or number in the upper right-hand corner of the envelope and rule lines on the face of it where information pertaining to the individual animal can be recorded. This includes the birth dates of animals raised, the purchase date, price paid and source of animals purchased, breeding dates, and freshening dates.

Registration papers, pedigrees, artificial breeding slips, production record cards, Bang's test certificates, and the like are put inside the envelope where they are immediately available when needed. These envelopes are then placed inside a 2-ring notebook cover. They are placed in alphabetical order of the barn names of the cattle or in numerical sequence if numbers are used to designate individual animals. This arrangement makes it easy to quickly turn to the records of any given animal.

When an animal is sold or otherwise disposed of, appropriate notes, such as the name and address of the buyer, date of sale, price received, etc., are made on the face of its envelope, which is then removed from the notebook cover and placed in another marked "animals disposed of."

This system is easy to use and can be extended indefinitely. There can be separate books for cattle in different barns, for animals of different age groups, for cows in production, and for heifers not yet in production, or for any other basis for grouping. Likewise for animals disposed of, there can be a book for each year or other time period. This can be further subdivided into animals sold for breeding purposes, animals sold for beef, or animals that died.

The notebook covers fit well in shelves of ordinary size and a great deal of information can be stored in a small space. Moreover, if this simple system is followed and appropriate entries are consistently made, complete information about an individual animal can be obtained in a matter of seconds.

We have used this system for about 10 years and have received many compliments from cow-testers, artificial inseminators, and cattle buyers for the completeness of our records and the quickness and ease with which information for a given animal can be made available.

ED . . . ***and EMMA***

"Em, Frank's coming . . . Em . . . Em!"

". . . what with falling prices and all, I'm economizing by making over some of my old dresses."

ONLY 10' 6" OF SPACE, from wall to wall for this work-saving, efficient milking parlor with Clay Walk-Thru Stalls. You feed 'em . . . milk 'em all within a four step area. Less floor area required, means lower building cost.

COWS ENTER FROM HOLDING AREA

Entrance and exit doors are easily operated from pit. Cows move through Clay Walk-Thru Stalls with ease. Saves work because cows bring milk to you.

MEASURED FEEDING

Once cows are in Clay Walk-Thru Stalls just turn crank and feed is measured automatically from hopper into pan.

YOU CAN MILK FASTER

With two milking machines and Clay Walk-Thru Stalls you'll milk 30 cows an hour. Get the job done quickly and be in to meals or on to next job sooner.

Can you think of an easier way to milk cows?

CLAY WALK-THRU PARLOR STALLS SAVE WORK . . . SAVE TIME

Milk faster—save steps, work and time, get cleaner milk—with Clay Walk-Thru Stalls. One man easily handles 30 cows per hour in a low-cost four stall parlor.

GRADE "A" MILK plant requirements can be met at low-cost . . . efficiency is greatly improved and cost of help is cut to minimum.

NO STOOPING, bending, carrying. Everything is handy in a small area. Work is cut in half.

MEASURED FEEDING at a turn of the crank.

ALL GALVANIZED, built to last . . . low maintenance cost is built-in. Lasting strength and appearance.

LOW BUILDING COST, because stall acts as alley, requires less space, can cut remodeling or building cost as much as 30%. Pays for itself.

IT'S FUN for one man to milk cows in four Clay Walk-Thru Stalls.

MODERNIZE now with Clay Walk-Thru Stalls. Get full details before you re-build. You may save hundreds of dollars.

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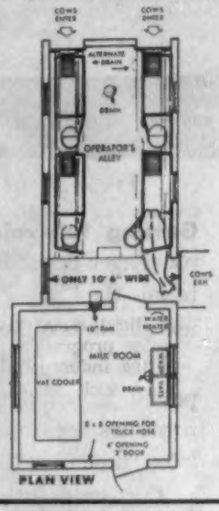

PLAN VIEW

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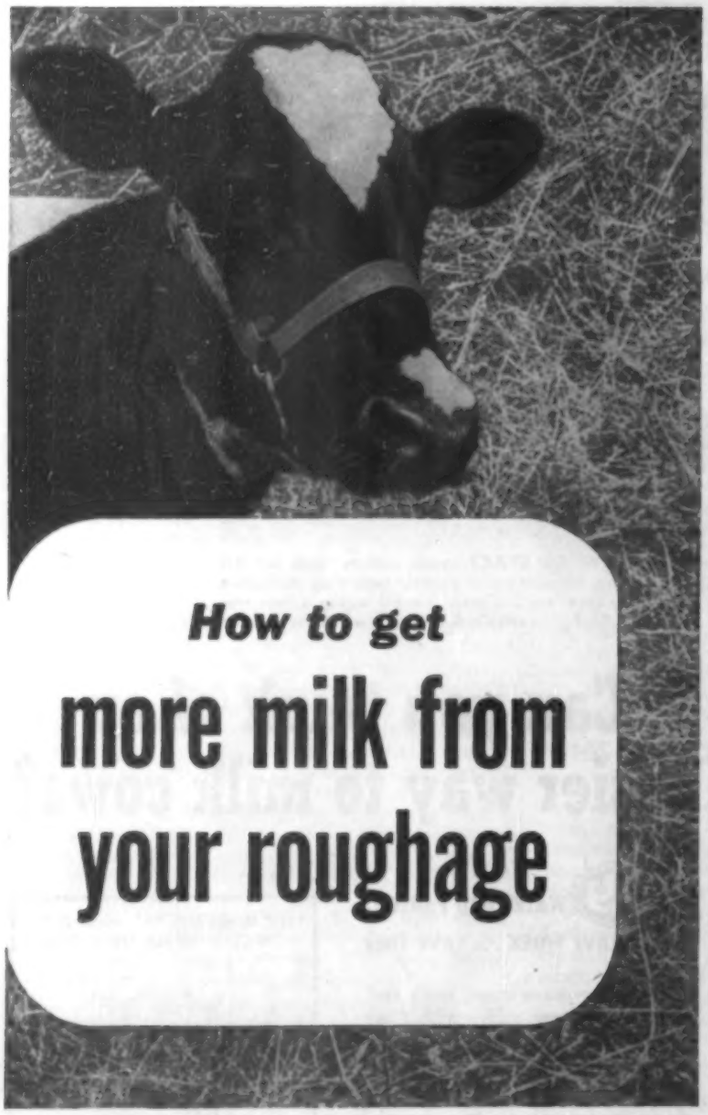

How to get
more milk from
your roughage

Getting full value from hay, silage and other roughages depends on the job done by rumen bacteria—the "bugs" that help cattle break down and use all kinds of home-grown roughages.

That's why Du Pont "Two-Sixty-Two" feed compound is so valuable in dairy supplements. It furnishes urea nitrogen that nourishes and stimulates rumen bacteria.

As the "bugs" convert "Two-Sixty-Two" to protein, they multiply faster and work harder. More of the feed value locked up in fiber is released to produce milk.

Check with your feed man. Be sure your supplement contains "Two-Sixty-Two"—to help you get the best efficiency from the roughage you grow.

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BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

HIGH-QUALITY SEED is a must for large yields at standard planting rates. Notice the difference in these red clover stands.

Don't "BARGAIN" with seeds

By figuring the price per pound of live seed, before you buy, you will save money and be assured of planting the best seed available.

by Roy Reiman

SEED buying time is no time for you to go bargain hunting. What looks like a bargain now may turn out to be something far from that at harvesting time. Seeds of higher purity and germination percentages tend to sell at higher prices, but the larger yields they produce more than offset the difference in original cost.

L. E. Everson, in charge of the seed testing laboratory at Iowa State College, says low-quality seed just won't produce as many healthy plants per acre as high-quality seed.

If you plant low-quality seed you'll have to plant at a higher seeding rate to get the same number of plants as with good seed. The additional seed required will still make the seed bill higher than that of high-quality seed.

Suppose you have a choice of two lots of red clover seed, for example. Lot A has a purity of 99.85 per cent, germination of 95 per cent (including hard seeds) and the price is 35 cents per pound. Lot B has a purity of 83.50 per cent, germination of 60 per cent and is priced at 30 cents per pound.

Now which of these would you choose, Lot A or Lot B? For those of you who still choose Lot B, it would actually cost you 23 cents more per pound of live seed than Lot A. And, after all, live seed is what you're interested in.

Use this simple formula . . .

Now here's how the price per pound of live seed was figured. You simply multiply the purity percentage times the germination percentage, and divide the answer into the cost per pound. The formula looks like this:

$$\frac{\text{Cost per pound}}{\text{Purity} \times \text{germination}} = \text{Price lb. live seed}$$

And here's how it worked with our problem:

Lot A

$$\frac{35 \text{ cents}}{99.85 \times 95} = 37 \text{ cents per lb. of live seed}$$

Lot B

$$\frac{30 \text{ cents}}{83.50 \times 60} = 60 \text{ cents per lb. of live seed}$$

So what looked like a bargain at first (Lot B) is actually much more expensive than Lot A.

There's still another way you can save money with your seed this spring, and that's by planting the proper rate at planting time. Recommended seeding rates usually don't include any adjustment for the quality of seed.

As a result, low-quality seed is often applied at the same rate as high-quality seed. To obtain a better estimate of the best seeding rate for seeds of various qualities, Iowa State College seed specialists have a formula you can use.

But first you must understand what the "expected quality" factor is. This is a factor the specialists found necessary to work out the formula. Actually all it amounts to is a factor based on the necessary quality of seed to give a satisfactory field stand.

On this basis, they've found the following "expected qualities" should be used for some of the common crops:

Alfalfa	83
Red clover	83
Soybeans	78
Small grains (oats, etc.)	83
Brome grass	68

To figure seeding rate . . .

Using this factor, you can figure the proper seeding rate for any seed you buy. Here's how you do it. Again you multiply the purity percentage times the germination percentage. Divide this answer into the product you get by multiplying the expected quality of the seeds times the recommended seeding rate.

Here's the formula:

$$\frac{\text{Expected quality} \times \text{rec. seeding rate}}{\text{Purity} \times \text{germination}} = \text{seeding rate}$$

Now let's try a problem with this formula. Again suppose you have a choice of the same two lots of red clover and the recommended seeding rate is 9 pounds per acre. Here's how it works:

Lot A

$$\frac{83 \times 9 \text{ lbs.}}{99.83 \times 95} = 7.9 \text{ lbs. per A. "seeding rate"}$$

Lot B

$$\frac{83 \times 9 \text{ lbs.}}{83.50 \times 60} = 14.9 \text{ lbs. per A. "seeding rate"}$$

Again you can see what appeared to be a bargain (Lot B) would have to be seeded almost twice as heavy as Lot A. So remember, Everson warns, when you buy or plant seed, it's not the number of seeds you plant that counts, but it's the number of healthy seedlings that you're going to get in the field that will make you money.

ARMOUR AND COMPANY'S
1955 REPORT TO AGRICULTURE

the new spirit in our industry

In the future, we may look back on 1955 as the year that marked the beginning of a new understanding and spirit in the livestock and meat industry.

Livestock producers, meat packers and retailers proved in 1955 that they could raise, process and sell 161 pounds of meat per person in America—a per capita record since 1908 and an all-time record for total tonnage produced. The United States meat supply for 1955 was estimated at 80,400,000 hogs, 39,950,000 cattle and calves, and 16,600,000 sheep and lambs. In addition, there was a near record supply of 4,650,000,000 pounds of poultry of all kinds. On the basis of ready-to-cook poultry this figures about 27 pounds per capita.

You farmers and ranchers have made an outstanding contribution to raising the standard of living of all of our people, and you are to be congratulated.

The disappointing factor in 1955 was that neither the livestock producers nor the processors were adequately compensated for all of the work they did, for the huge amounts of money they have invested, and for the risk that is always present in the livestock and meat industry.

In 1955, however, various elements of our industry got together and took some very positive steps to correct the financial situation, and we look forward to more of this constructive cooperation in 1956.

One of the most encouraging developments was that the meat-type hog program really gained momentum and headway. Agricultural college people, farm publications and broadcasters, general farm organizations, pure bred associations, the U. S. Department of Agriculture and others are now backing the movement to get rid of the over-fat, chuffy lard-type hogs. In their place, we should have hogs which yield a larger percentage of leaner hams, pork chops, pork roasts and picnics.

Buying meat-type hogs on the basis of their value and yield presents difficulties, but we made considerable progress in that direction, too. More and more of the market reports mention the higher prices paid for meat-type hogs, and you can expect that tendency to spread.

While we need the meat-type hog to get away from the unsightly internal fat in pork cuts, Armour and Company took a big step forward last fall when we established new and much closer trimming standards for the principal pork cuts.

We are particularly encouraged by the many organizations of farm and ranch people who have started programs within their organizations to promote the sale of meat. They are giving their time and their money to these efforts, and there is no doubt that they will prove to be well rewarded.

As you can well understand, when an Armour salesman goes into a store, he knows that he can't sell the dealer beef, lamb, hams, bacon or anything else until the dealer disposes of the meat he has on hand. It is the same in the wholesale end of the business. When the packers' coolers are full and meat isn't selling well, they can't be expected to reach out aggressively and pay more for your livestock.

The key to our mutual problem lies at the retail meat counter. Meat prices have not kept pace with the prices of most other things people buy. Our mutual job is to make meat so attractive that Mrs. Consumer will pay just a little more per pound. This will mean that hundreds of millions of dollars of additional money will flow through to the retailers, the packers and the livestock producers.

It is possible to achieve this result by giving Mrs. Consumer the finest, most attractive meats of all kinds that we can possibly produce. Then, we should tell people how good the meat is, and how good it is for them. We will do this through publicity, through paid advertising and through that greatest of all methods of winning good will—personal conversations with our friends and neighbors.

In this connection, remember that if you need additional information about meat or how to prepare it, just write to Marie Gifford in care of Armour and Company, Chicago 9, Illinois.

ARMOUR AND COMPANY

Fr. Specht

President

Working together

to put more and better meat on America's dinnertable!

The meat picture...
with a focus on the future

The Progressive Livestock Producer can face the future with well-placed confidence. With an ever-increasing population, more consumers are coming into the market every year, with a consequent increase in the demand for cattle, hogs, lambs and poultry. But the demand is for meat of higher quality.

Today, more than ever, the successful livestock producer is a "full-time" operator. He is a man of long experience in his chosen field, with the skill, knowledge and judgment that only years of practical work and study can bring. He insists on good quality in his livestock and he takes good care of his animals.

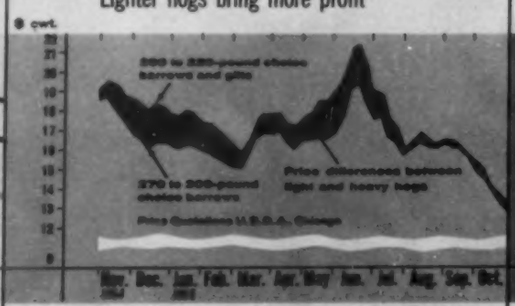
By staying in business every year regardless of the market outlook, the successful stockman makes maximum use of his facilities and equipment, and develops a lower cost operation. He makes his plans so that he will have finished cattle, hogs and sheep to sell at seasons of the year when they are likely to be the most profitable.

The long-term outlook is bright for livestock producers who are in the business to stay—who keep abreast of the latest developments in breeding, feeding and marketing to produce the quality of meat the consumers want.

How meat prices compare with other commodities

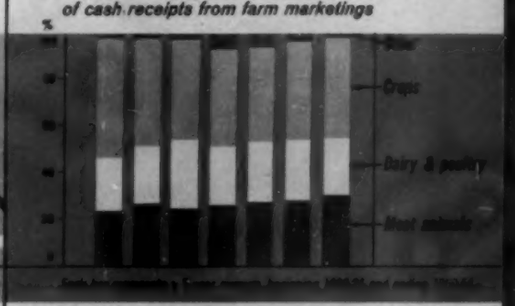
This chart presents a critical challenge to both livestock producers and processors. It shows that wholesale meat prices have not kept pace with foods in general and with other commodities. It clearly indicates we must do everything possible to make meat products more attractive to consumers to justify better prices for meat. Even a slight increase will mean a long overdue adjustment in the earnings of livestock producers and processors who have been inadequately compensated for their work.

Lighter hogs bring more profit



Lighter weight hogs, which yield smaller, leaner pork cuts, sold for as much as $2 per cwt. more at times last year than the heavy, over-fat barrows. Except for a very brief period, the lighter weight animals always brought more money per cwt. than heavy-weights. There is a demand for all weight averages of pork cuts. However, this chart proves that hogs which yield lighter, leaner hams, loins and butts average to bring the best results to the livestock producer.

Livestock account for an increasing proportion of cash receipts from farm marketings



Note that more and more of the farmer's cash receipts are coming from livestock, dairy and poultry products—and less and less from crops and other sources. Meat animals, dairy and poultry accounted for 46.9% of cash receipts from farm marketings in the 1920-24 period, while by contrast, they accounted for 55.3% in the 1950-54 period. This definite trend should give encouragement to the livestock producer—assurance that his knowledge, skill and hard work are bound to pay off year after year.

More than 60,000 Armour People are working together to make the best products—to get the most value out of the livestock we buy from you.

Some of us are engaged in research to make Armour products constantly better, to develop new products and new methods of processing to increase the value of the meat animal. Others seek out new markets for livestock products. Still others are engaged in distributing Armour products via the great fleets of Armour refrigerated railway cars and trucks—to give consumers the meat they want, when they want it.

Others are building up a consumer demand for Armour food and non-food products through strong advertising and promotion. Then there are the specialists who design the attractive packaging that helps make our products more appealing to the consumer.

Among all Armour people you will find a strong desire to give consumers what they want. A good example of this is found in the new trimming specifications for pork that we recently adopted. Where the old-type pork loins and butts were allowed a maximum of one-half inch fat covering, the new specifications call for a maximum of only one-quarter inch of fat.

By building a greater demand for better meat products that sell for better prices, Armour continues to build a better market for your livestock.

The Modern Retail Food Merchant is a key man in the drive to obtain better prices for meat, which in turn, will justify better prices for livestock. His modern merchandising methods are an important factor in reaching this objective, and more and more retailers are adopting these methods every year.

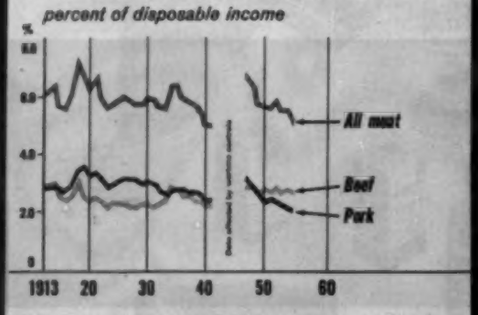
It takes only a walk through a modern supermarket to see the tremendous strides that have been made in food retailing. Everywhere you look you see wonderful advances in store design, layout and self-service equipment. No effort has been spared in making shopping more pleasant, time-saving and convenient for the modern food shopper.

And most important to all of us in the meat industry, you will see meats of all kinds such as well-trimmed roasts, chops, hams and steaks as well as sausages, Flash Frozen Meats and canned meats—all attractively packaged and temptingly displayed.

By providing Mrs. Consumer, through these modern methods, with the kinds, the grades and the cuts of meats she wants, the progressive food retailer sells more meat and at better prices.

This all adds up to a stronger market for meat and better prices for your livestock.

Retail value of meat consumed as a percent of disposable income



The retail value of meat consumed in 1955 was about 25% greater than in 1947. But in that period, the total amount of money that consumers had to spend has gone up about 60%. And in the past years, the proportion of disposable income spent for beef has remained fairly constant—around 2.8%. In the case of pork, there has been a steady downward trend—from 3.0% in 1947 to 2.0% in 1955—a trend the meat industry hopes to reverse by producing more palatable pork and through improved merchandising.

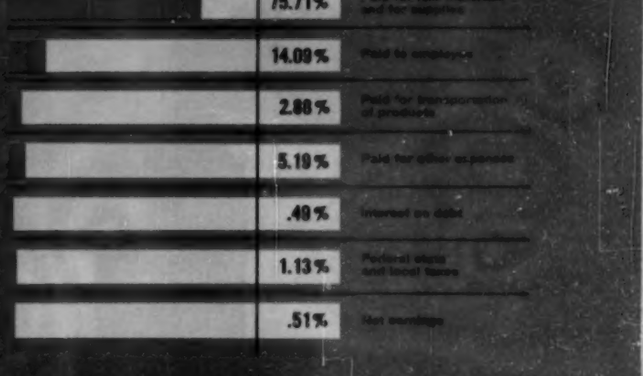
76% of Armour's 1955 Dollar went to our suppliers

As in the previous years, the "lion's share" of our total income was paid out for farm products and other raw materials and supplies. For these items in 1955, our total payment reached $1,469,669,000.

Wages to employees totaled $377,489,000—while payments to railroads and truckers for transporting Armour products to consumers amounted to $56,709,000. Other items such as maintenance, repairs, depreciation, power, communications, insurance, advertising and interest took $111,765,000. And taxes called for $92,258,000.

Deducting these expenses from our total income of $1,958,169,000 leaves us a profit of only $99,108,000—or 5.06¢ out of a cent per dollar sale.

More than 40% is true that as other industry gives as much service to so many people—for such a small profit—as the meat packing industry!



More than 2,000 products
made by Armour and Company for homes, farms and industry

When you go shopping, look for the fine Armour products illustrated here—and many others. We produce all grades, weights and cuts of beef, pork, veal and lamb. Our brands of sausage products and smoked meats are nationally famous, and Armour canned meats of all kinds are unsurpassed for quality and flavor.

Armour Star Lard and Armour shortenings are staples in millions of farm kitchens, and our livestock producer friends are also good customers for Armour brands of butter, eggs, cheese and poultry.

Many other non-food products by Armour are giving great satisfaction to America's farmers—soaps, fertilizers, feed ingredients such as Armour Meat and Bone Scraps, Tankage, and Steamed Bone Meal.

Remember, the Armour name is a pledge of quality that you can always trust.

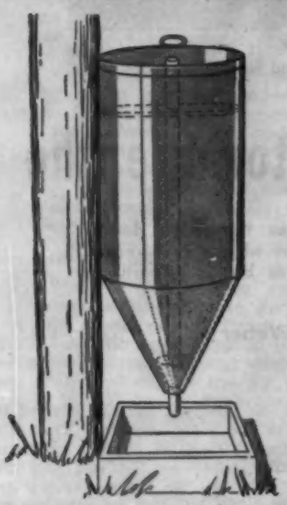
ARMOUR AND COMPANY • General Offices • Chicago 9, Illinois

HANDY HINTS

SELF-FEEDER FOR PIGS

We built a very simple but workable self-feeder from an old cream separator (water separator).

We sawed off the bottom of the separator tank so that the opening was slightly larger than a broom handle. We nailed a small funnel



six inches from the bottom of the handle that forms a shut-off valve at the bottom of the separator tank.

The broom handle was braced in the top of the tank with a board. A hole was drilled in the center of the board to hold broom handle centered.

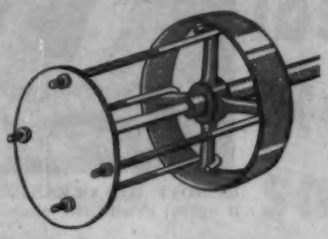
The separator tank was nailed to a fence post so that the bottom of the broom handle was six inches from the trough, placed under the self-feeder.

The pigs push up on the broom handle which causes the food to come down into the trough.

The pigs learned to use this self-feeder in less than an hour.

Arkansas — KENNETH BROWN

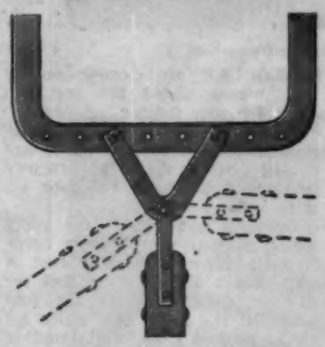
PULLEY PULLER



This is a good puller to remove a stubborn pulley with equal pressure on all the spokes. The clamps have to be proportionate to the size of the pulley. Otherwise the hooks will straighten out or the threads will strip.

Wisconsin — NEIL RASMUSSEN

BINDER HITCH PREVENTS BREAKAGE



Breakage of binder tongues caused by sharp turns of the tractor can be eliminated with this simple hitch. A V-shaped attachment can be made from any iron, a little lighter than the drawbar, and attached as indicated in the sketch.

This hitch is especially good for machines having short drawbars or on which tire fenders or frame parts extend out.

Minnesota — ORLAND MAENKE

SAFE WAY TO DRENCH COWS

Drenching a cow without the aid of a veterinarian can be a difficult as well as a dangerous job when using a plain bottle. I find it safer and easier when I place a used teat cup inflation over the neck of the bottle. This way the cow can chew on the end of the inflation and there is no danger of broken glass causing injury to the cow.

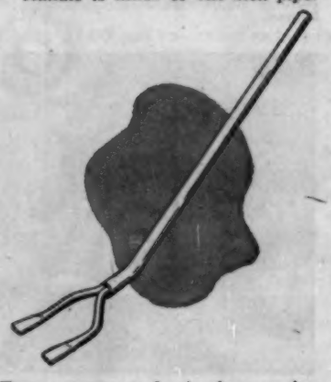
Virginia — HAROLD MARTIN

BOARD SAVER

When remodeling or taking down old buildings, there are probably many times when you wished there was some tool that would prevent boards from splitting.

The prongs of this metal tool fit under board at studs and by prying down, board will lift off without splitting.

Handle is made of one-inch pipe.



Two prongs and shank can be made out of one-half-inch rod on home forge.

Wisconsin — TONY BAUMGART

"It is no job at all to keep our DARI-KOOL bright and clean.... it only takes 10 or 15 minutes a day!"

—says
Mrs. JOHN URBIN
Mosinee, Wisconsin

DARI-KOOL
BULK MILK COOLER

MILK MAY BE POURED OR PIPED INTO THE COOLER

The ICE-BANK Cooler that Outperforms them All!

Model Shown is DKS — 300 (300 gallons)

Also available in 100, 150, 200, 250, 400, 500, 600 and 700 gallon capacities.

DARI-KOOL'S ICE-BANK AND GLACIAL WATERFALL ASSURE FAST, ECONOMICAL COOLING

Cutaway drawing shows how DARI-KOOLS ice-cold glacial waterfall flows down all sides and bottom of milk tank. A large reserve ice bank assures an ample supply of ice-water. Milk is cooled faster than by any other method.

Cools Milk Fast and Economically — and NEVER FREEZES Milk

Milk is cooled to below 38° in less than one hour —assuring a lower bacteria count and better milk.

DARI-KOOL tanks are much easier to clean because the inner milk tank — with its moist, refrigerated side walls, retards the formation of milk stone.

DARI-KOOL tanks are stainless steel — inside and out (not painted black iron). The rugged 10 gauge steel frame and bulge-proof milk tank assure accurate calibration and correct payment for the milk.

DARI-KOOLs are electronically calibrated.

Compare them all and you'll choose a farm-proven, guaranteed DARI-KOOL—America's largest selling bulk milk cooler.

MEETS ALL 3-A SANITARY STANDARDS

Send for new booklet "How to Choose the RIGHT Bulk Cooler"

AUTHORIZED DEALER DARI-KOOL BULK MILK COOLERS

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Please send — without obligation to me — complete information about DARI-KOOL Bulk Coolers.

DARI-KOOL's are sold and serviced everywhere. See your nearby dealer today or mail coupon for facts and figures.

Name.....
Town..... RFD.....
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Priced Right! Engineered Right! Serviced Right!

McDowell COUPLING Portable Irrigation SYSTEMS

The Original, Automatic Pressure Lock Coupling

For portable irrigation that works better with less work *and less upkeep*, see your McDowell dealer. He offers the best coupling made . . . will engineer a complete system for your particular needs . . . and he's staffed to give fast, expert service.

No hooks, latches, or gadgets.

"Mac" McDowell

See your reliable McDowell dealer — he's a good man to know better!

MAIL COUPON for FREE BOOKLET!

Name_____
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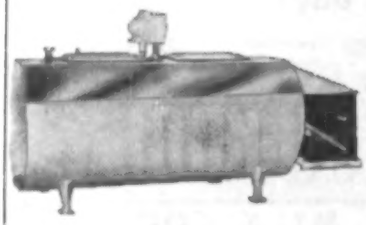
McDOWELL MANUFACTURING CO.
PITTSBURGH 9, PA.

Smart Dairy Farmers Are Choosing Zero's T-20 Vacuum Milk Tank For All Types of Milking Operations



ZERO T-20

- may be used as a pour-in tank, or with Super Strainer, or direct cow to tank hook-up
- has a completely round design for greater visibility, strength, accurate calibration and easier cleaning
- the large vacuum reserve in tank gives more uniform milking and pulsation
- is perfectly air-tight to hold vacuum so you know it's dust-and-vermin proof

Direct Cow-to-Tank Milking with Zero's T-20

Here's the ideal goal in your planned milking system . . . Milk is drawn direct from cow to tank and refrigerated by vacuum in Zero's T-20 Farm Tank . . . It isn't always necessary to have a special building for your T-20. Your present equipment can be adapted for use with this ultra-modern system.

"Like Sucking Milk Through a Straw"

Use your T-20 as a vacuum refrigerated tank with Zero's Super Strainer under Vacuum. Draws a pail of milk into tank in approximately 30 seconds. Eliminates lifting and pouring milk pails . . . saves cost of pour-in strainer . . . makes milk taste better because it is vacuum refrigerated that removes many of the feed and cow odors and animal heat.

An Excellent Pour-In Tank

Round design puts operator close to strainer easing the lift and lowering the pouring height . . . Pour from both sides . . . There is no front or back . . . The future is vacuum milking . . . In the beginning, a lot of dairymen use the pour-in method with the vacuum tank.

Write TODAY for the Name of Your Nearest Zero Dealer or Tell Us Who Your Dairy Equipment Dealer Is.

Zero SALES CORP.
621-C, Duncon Ave.
Washington, Mo.

New pasture renovator saves ¾ of fertilizer costs

Depth placement does it. New model Servis Double Deck Soil Builder places fertilizer up to 6" deep and seeds pasture in one operation. Tests show 100 lbs. fertilizer placed below roots gets results of 400 lbs. on surface. Resulting savings pay for renovator when used on 55 acres once!

Surprisingly light Draft. Tractor mounted, less draft than pull type. Fits 3-pt. lift or tool bar, 2 or 3-plow tractors. Caster-mounted coulters cut turf, are followed by fertilizer openers. Offset seed openers are followed by press wheels.

Use on row crops, too. May be adapted for legumes in mulch farming. Also as side dresser, drill, chisel. Year 'round tool. See it at your dealer. Remarkably low priced.

Write today for name of dealer near you.

Servis EQUIPMENT COMPANY
1012 Singleton Blvd. Dallas, Texas

A Vest Pocket Herd Book Is a Good Investment

REMOVE AIR CLEANER at least once a year. Take it apart; clean filter element and replace all worn parts.

Let your tractor breathe

You may be choking your tractor to death without knowing it. Clean air cleaner regularly and add new oil for better operation.

by J. A. Weber

REGULAR air cleaner service means added life and pep for your tractor.

Dirt is your tractor's worst enemy. Most tractor troubles are caused by dirt that finds its way into your tractor engine. Your job is to keep it out.

Did you realize that for every gallon of fuel your tractor burns it gulps down 9,000 cubic feet of air? That's 225,000 cubic feet per day or enough air to fill four silos. In the field, that much air would contain about ½ pound of dust.

If it weren't for the air cleaner, all this dirt would go into your tractor and cause terrific wear of engine parts. If it is properly serviced, the air cleaner will trap 99 per cent of this dirt before it gets into your tractor engine.

Takes out dirt . . .

Tractors are equipped with oil bath air cleaners. Air enters at the top where a screen or precleaner keeps out such things as leaves and husks. Air which still contains lots of dust goes down through the stack and bubbles into the oil in the cup at the bottom of the cleaner. Here the air turns to go up through the wire screen and filter element. Heavier particles of dirt settle to the bottom of the cup.

As the air strikes the surface of the oil, it forms a spray mixture of air and oil that is carried up into the filter element. This mixture swirls and changes direction many times so that oil and dirt remain on the filter element and the clean air goes on into the engine.

Oil that collects on the filter element flows back into the bottom cup carrying with it the fine particles of dust that could have caused harm in your tractor engine. This air cleaning process is continuous while the engine is running so the filter element is constantly washed with oil spray.

Practically all of the dirt that enters the air cleaner settles to the bottom of the oil cup. It's up to you to keep this cup clean and ready for more.

What you must do . . .

1. **Daily.** Inspect the oil cup of the air cleaner. If ¼ inch of dirt has collected, or if the oil has thickened, clean the cup and fill it with new oil. If the conditions are especially dusty, inspect the oil cup twice daily. While the cup is off, check the lower screen of the filter element and remove any chaff or dirt that may have collected. If the cleaner has been serviced properly, the filter element will be clean and oily. Not more than ¼ inch of dirt should be allowed to accumulate in the cup. If more dirt collects the efficiency of the cleaner is reduced and dirt goes into the engine. Al-

The author is a member of the agricultural engineering staff, University of Illinois.

DAILY INSPECTION of the air cleaner cup for sand and dirt takes very little time but may mean longer life for your tractor.

CLEAN STACK every two months. Remove the stack cover and cup and force a rag through stack. A broom handle makes good ram rod.

ways keep the oil in the cup at the proper level.

2. **Every two months.** Inspect the air cleaner stack. With the top stack cover and oil cup removed, you can see down through the stack of most air cleaners. Dirt that collects on the walls of the stack can be removed by ramming a cloth through the tube. A broom handle makes a good ram rod. Check air cleaner hoses and clamps frequently. One defective hose with a small hole can let in enough dirt to ruin your engine.

3. **At least once a year.** Remove the entire air cleaner from the tractor for a good cleaning. Take out the filter element if possible and wash the element in solvent or kerosene. Some types of air cleaners are very difficult to clean, even when they are removed from the tractor. Many owners take these cleaners to their dealers for a scrubbing with a steam cleaner. If the season is especially dusty, the air cleaner should have two major cleanup overhauls during the year.

Use new oil . . .

The oil you use in your air cleaner is important to the life of your tractor engine. Practically all manufacturers recommend that you use the same type and viscosity of oil in the cup of the air cleaner as you do in the crankcase of the engine. Using too light an oil will result in oil being pulled into the tractor engine where it will cause harmful deposits. Too, the oil level in the cup will be lowered and air will go into the engine without being cleaned.

Using a heavy oil will choke the engine, causing it to lose power and use more fuel than necessary. This same thing can happen if you allow the oil in the cup to thicken with dirt.

Never put used oil in the air cleaner cup. Used oil contains unburned fuel which dilutes the oil and makes it too thin for this use. Also, the unburned fuel will evaporate causing a low level in the oil cup. Used oil is already loaded with carbon and dirt and is not suited for use in the air cleaner.

Keep the cup filled to the proper level. Too little oil reduces air cleaner efficiency; too high a level will cause choking and oil will be pulled into the engine.

Precautions with diesels . . .

Using oil of too light a weight or filling the cleaner cup too full can cause a diesel engine to "run away." The engine goes at uncontrollable speed that can cause extensive damage. Here is how it works. Excess oil from the air cleaner that sucks into the engine is an uncontrollable source of fuel. Even though the governor shuts off the regular fuel supply, excess

(Continued on next page)

CUPFUL OF DIRT taken from an air cleaner. This would restrict the air flow and cause loss of engine power and excessive wearing.

silage insurance!

8 lbs./ton MEDO-GREEN keeps silage fresh, saves work, money

No weather worries with MEDO-GREEN. Use a fast, money-saving direct-cut harvester. Cut grass early when it's juicy and rich; ensile without wilting. Early harvest means better second cut.

MEDO-GREEN is clean, safe, easy to use. You apply it automatically. The fertilizer attachment from your corn planter does a good, fast job. Fill the hopper, start the motor, in goes the grass and MEDO-GREEN.

No extra help with MEDO-GREEN. MEDO-GREEN and chopped grass blow into silo in one operation. No pockets or entire silos of rotten silage. MEDO-GREEN starts at once to hold in freshness and food values.

Silage that stays green, sweet, extra nourishing. Now you can make it every time. MEDO-GREEN Sodium Bisulfite keeps silage tasting so good cows eat four times as much. You save time, hard work, high costs.

Highest digestible dry matter, TDN, sugar, carotene. Chopped grass put up with MEDO-GREEN comes out fresh and green. It makes silage you can count on for highest digestible dry matter . . . total digestible nutrients (TDN) . . . energy-giving sugar . . . and carotene.

$1.00 per ton more nutrients in treated silage. One feed expert analyzed alfalfa-brome grass silage made with and without metabisulfite (MEDO-GREEN). He found that even after subtracting the cost of the metabisulfite there were over $1.00 per ton more nutrients in the treated silage.

MEDO-GREEN costs far less to handle. You'd need about 300 lbs. of ground grain or 100 lbs. of molasses to treat a ton of silage. You can do it better with just 8 lbs. of MEDO-GREEN. For a 100-ton silo you'd pay for and handle 30,000 lbs. of grain or 10,000 lbs. of molasses as against only 800 lbs. of MEDO-GREEN. Imagine what you save in time, work and money!

Most important—MEDO-GREEN saves your silage. The big fact is that MEDO-GREEN is silage "insurance." Untreated, all your silage can easily spoil and be worthless. MEDO-GREEN silage stays fresh, green, sweet-smelling for months.

Get MEDO-GREEN from your farm supply dealer; or, for dealer's name, write: MONSANTO CHEMICAL COMPANY, Inorganic Chemicals Division, Dept. HD, 710 North 12th Blvd., St. Louis 1, Missouri.

MONSANTO

WHERE CREATIVE CHEMISTRY WORKS WONDERS FOR YOU

GROW MORE PROFITABLY . . .

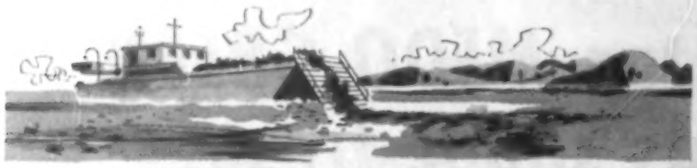
Weed Killers
Brush Killers
DDT and Parathion Insecticides
Medo-Green® Silage Preservative
Phosphates (liquid and solid)

LION

Lion Brand Ammonium Nitrate
Sulphate of Ammonia
Anhydrous Ammonia

modernize with MANAMAR®

...and get the vital "Sea-Power" Supplement in your dairy feeds!



Your dairy feeds will have built-in quality, when you ask your dealer to fortify them with ManAmar—the "Sea-Power" Supplement!

When you buy fortified feeds, you are interested in more than just the ingredients listed on the tag. ManAmar fortified feeds offer you many important extra features, which help your cows get *maximum milk production* and *top efficiency* from your grain and roughage.

Ask your ManAmar dealer today about "Sea-Power" Supplement, and how the "Modernize with ManAmar" plan can increase your cows milk production and bring you bigger milk checks!

important **MANAMAR** *"extras"...*

- "Sea-Power" Supplement
- Laboratory Service
- Field Testing
- Formula Service
- Resale Help in Your Area
- National Advertising and Dealer Helps

PHILIP R. PARK, INC.
FEED ENGINEERS
MANAMAR
BERTH 42, OUTER HARBOR, SAN PEDRO, CALIFORNIA
145 WEST FIRST STREET, DUBUQUE, IOWA

IN YOUR DAIRY FEEDS...
"SEA-POWER" Nutrients make a WHALE of a difference!

oil from the air cleaner continues to run the engine at higher and higher speed.

If this should happen on your tractor, throw a jacket or sack over the air cleaner intake at once. But don't take a chance; use oil of the right weight and keep it at the proper level.

Air cleaner neglect is a quick ticket to the repair shop. Dirt that gets by the air cleaner acts like a grinding compound when it gets to the engine. Parts most affected are intake valves, rings, sleeves, and pistons.

Dirt also gets into the oil where it is carried to all bearing and moving parts. A set of grooved intake valves is pretty good evidence that the air cleaner has been neglected or that an air leak existed between the cleaner and the engine.

In University of Illinois field tests, intake valves from tractors where air cleaner service was poor, were worn three times as much as those in tractors with average care. When you take the time to inspect the oil cup daily, you are not just following recommendations, but adding hours of life to valves, rings, pistons, and sleeves.

Neglect causes loss . . .

Have you ever had a head cold that had you stopped up and gasping for breath? Your tractor has to breathe, too. If its air supply is restricted by a dirty air cleaner, it, too, will lack pep and power. If you suspect that the air cleaner on your tractor is restricting air intake, you can check it quickly by removing the hose that goes from the cleaner to the carburetor.

If the tractor immediately picks up speed and pep, it's time to remove the air cleaner from the tractor and give it a good cleaning. Except for this test, never run a farm tractor with the air cleaner disconnected. Don't be like the fellow who found his tractor ran so much better when the dirty air cleaner was disconnected that he took the cleaner off and hung it in the barn. The cleaner is a necessary part of any farm tractor.

Dirt and especially bean fuzz may collect in the body of the cleaner even though you religiously service the oil cup. As more dirt accumulates, the tractor will gradually lose power and start using more fuel, so gradual in fact, that you may not notice it.

One tractor, brought in to the university laboratory, had lost so much power that it would hardly pull itself. A thorough cleaning of the air cleaner restored 19 horsepower to this tractor. A good cleaning of the entire cleaner once a year is insurance against loss of power by air restriction.

Keeps out large particles . . .

As standard equipment, the air cleaner stack is usually covered with a cap that keeps out water and has a large mesh screen on the bottom side that allows air and dust to enter but keeps out such things as leaves and husks.

For a few dollars you can replace this cap with a precleaner that takes out the larger particles of dirt and dust. A precleaner is usually provided with a small jar that should be emptied when it gets about three-fourths full. For safety, always use a heavy leather glove or canvas to unscrew glass precleaner jars.

While the precleaner reduces the work of the main part of the cleaner, it does not excuse you

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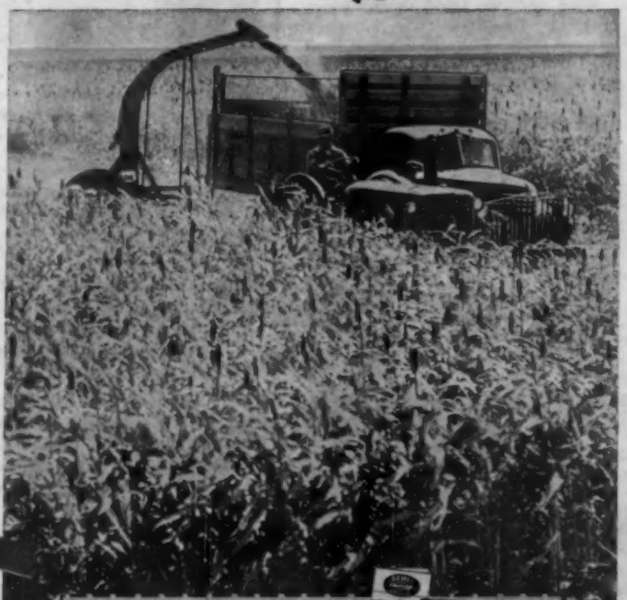

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from inspection of the cleaner cup. With a good precleaner, only the finer particles will reach the main cleaner and even though dirt may not build up rapidly in the bottom of the cup, the oil will thicken and need to be replaced.

Some farmers are inclined to cut off the intake stack so it is almost flush with the top of the tractor. This makes it easy to drive the tractor under low limbs or through low shed doors but it also increases the amount of dirt the cleaner has to handle.

Tests made by an air cleaner manufacturer show that there is twice as much dirt per cubic foot of air at the tractor dash as there is 18 inches above it. An air cleaner can only remove a certain percentage of the dirt in the air. Keeping the intake stack where the manufacturer placed it or even extending it for very dusty conditions will keep the dirt in your engine at a minimum.

Dust isn't good for humans to breath either. Though they are hot to wear, air filters are good things to use when you are driving the tractor under especially dusty conditions. Protect your own health by investing a couple of dollars in an air cleaner for yourself.

Other breathers and cleaners . . .

Most tractors have a crankcase breather that requires some attention. Since recommendation on the time to service these breathers varies from one make of tractor to another, it is well to check the manual on this point. Lack of crankcase ventilation causes sludge and corrosion of engine parts. In extreme cases the breather may become clogged and crankcase gaskets will be blown out. Avoid these troubles by regular crankcase breather service.

Yes, your tractor air cleaner has a big job. In one year it must separate 30 pounds of dirt from 13 million cubic feet of air. There isn't room for 30 pounds of dirt in that oil cup so you've got to help by cleaning it regularly to make room for more. The time it takes will pay for itself in added life and top performance from your tractor. **THE END**

Keep your concrete mixer clean

Before a mixer is ever used, it should be painted with a light oil, preferably kerosene and lube oil mixed. Concrete cannot stick to this so tight that it cannot be scraped off with a putty knife. This treatment should be repeated, occasionally, to restore the oily film worn off.

There is a difference of opinion as to whether the cogs on the "bucket" of the machine should be lubricated. Some of the experts say grit is likely to be attracted by the grease, the grit then wearing the gears down. I use a heavy grease, sparingly and seldom, and have experienced no adverse effects.

Before the mixer is stopped for the day's work or the job's completion, throw a few gallons of water inside and turn the bucket upside down. Run water over the outside, at the same time rubbing with one hand to loosen stuck mortar. Clean up shovels, wheelbarrows, trowels, and other tools immediately after. If concrete is hardened on the mixer or wheelbarrow, it can often be broken loose by tapping with a hammer.

Taking those few extra moments to clean your mixer will increase its longevity, which in the long run means money in your pocket.

—F. B. CURRY

"A bulk tank is the only way to handle milk,"

SAYS OTTO OTTENSON
COTTAGE GROVE,
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Mr. Ottenson says, "My Stainless Steel bulk milk tank saves me a solid hour of labor every day. I have cleaner, better quality milk, and there's more of it. The Methylene Blue Test is up from 6 hours to an average of 8 or 9 hours. Butter fat is up 2 points to 3.8, and I've had as high as 4.0—at a premium of 6.7¢ per point.

"I'm getting 25¢ premium for bulk milk, and hauling costs were dropped 5¢ per cwt. Including the butterfat premium, I'm getting about two dollars a day more income from the 600 lbs. of milk my Holsteins produce daily. At that rate, my tank will *pay for itself* in about three years.

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Good results with Lahoma sweet sudan

Experiments show it to be drought resistant, rich in protein. It grows well in Oklahoma and cotton belt.

by Charles E. Denman

LEAFINESS from the ground line to the top of the mature plant makes Lahoma top-quality forage.

LAHOMA sweet sudan is a wide-leaved, late-maturing variety. It is exceptionally uniform in growth habit and has a distinctive yellow-green leaf color.

The variety has been found to contain up to 17 per cent protein when in the young succulent stages, but generally averages about 10 to 12 per cent protein. Livestock relish both stems and leaves even when plants are in the later stages of growth. This is true because of the increased sugar concentration in the plant as it nears maturity.

Forage yields of 2½ tons per acre have been harvested on upland sandy soils in Oklahoma during favorable seasons. Yields of 6½ tons of forage per acre have been obtained on fertile bottom land soils under irrigation. Seed yields have been as high as 1,500 pounds per acre on upland soils and up to 6,000 pounds on bottom land soil under irrigation.

Lahoma sweet sudan grass is a drought-enduring variety. It tillers well and is a good seed producer. The seeds range in color from apricot to sienna.

Leaf-stem ratio studies of Lahoma and other sudan varieties have been conducted. Plants used in the study were 24 to 30 inches tall. Lahoma averaged 67 per cent leaves while the two best common varieties averaged 58 and 56 per cent leaves, respectively. The increased leafiness of Lahoma indicates an improvement in quality of forage over the common types since leaves are preferred to stems by the grazing animal.

In grazing trials at the Oklahoma station, cattle consumed both stems and leaves of the sweet varieties, but ate only the leaves and left the stems of the common strains. In one grazing trial, the cattle left an average of 650 pounds residue per acre on the common variety plots and an average of 300 pounds residue per acre on sweet variety plots. The sweet varieties were grazed down uniformly, permitting faster and more uniform regrowth than in the common types where leaves were eaten, leaving the stems standing.

The protein content of Lahoma is similar to that of other sudans. The later maturity of Lahoma insures green forage over a longer period and gives a higher percentage of protein in the late season growth. In general, sweet and common sudans (when in the succulent growing stages) average about 10 to 12 per cent protein, but may range higher if grown on fertile soil.

Lahoma sweet sudan grass is adapted throughout the state of Oklahoma. Reports from various experiment station workers over the south indicate that the variety performs well in the cotton belt states. It has performed well in the drier sections of western Kansas but was severely damaged by leaf diseases in the eastern section of that state.

When moisture is excessive, increasing the humidity, leaf diseases often become troublesome with Lahoma and other sweet sudan varieties. If Lahoma is to be used for pasture or hay, diseases are not as harmful because they usually do not affect the plants adversely until the later stages of growth. Seed yields will be reduced in areas where leaf diseases are prevalent. The variety produces good seed yields in central and western Oklahoma and presumably would do well under similar growing conditions elsewhere.

Chinchbugs and grasshoppers attack common and sweet types. At present no known commercial variety of sudan is resistant to chinchbug infestations. The original selection of Lahoma appeared to be resistant or tolerant to chinchbug attacks. There has been no severe natural infestation of chinchbugs since 1949 and efforts to induce artificial infestations in the variety trial plots have been unsuccessful.

Prussic acid content varies in the different types of sudans, with the sweet types tending to be more dangerous than the common types. Lahoma tends to contain relatively more prussic acid than the common types but no more than the other sweet types currently available.

Lahoma has been grazed by cattle at this station for three seasons with no apparent ill effects to the animals. Nevertheless, precaution should be exercised when first turning animals into sudan fields of any variety, whether of the sweet or the common types.

Because of the unfavorable growing conditions in Oklahoma in 1955, there is only a limited amount of seed available for general planting in 1956, but it is hoped that the demand for certified planting seed can be adequately met in 1957.

The author is a member of the agronomy department, Oklahoma A & M College.

New Guernsey record

A record that has stood for 20 years in the Guernsey breed has been broken by Howland Master's Celesta, a senior 2-year-old cow owned by Weston Howland, Brattleboro, Vt.

In 365 days on 3x, "Celesta" produced 974 pounds of fat and 17,093 pounds of milk. This topped the fat record of 963 pounds, produced back in 1936 by Green Meadow Melba. It also was considerably more milk than was produced by "Melba" whose record was 15,342 pounds. The new record is pending calving requirements.

Concentrated milk to be tested in South

Concentrated fresh milk will show up on Southern food tables this spring for the first time.

A market test conducted by the Pure Milk Association of Chicago will feature a one-third-quart carton at several chain and independent grocery stores only. The product will make one quart of fresh milk with correct local butterfat test by the addition of two cartons of fresh water.

The retail price will be a few cents less than the store price of a quart of fresh milk in the area.

Pure Milk Association, a dairy farmers' cooperative, will process, package, and market the product. Its Kansasville, Wisconsin, plant will use a concentrating process developed by dairy scientists at the University of Wisconsin.

This product is launched only after extensive research in processing and consumer acceptance. Both the University of Wisconsin and the Association have tested the product on consumers in metropolitan markets. The dairy farmers' group furnished milk for University of Wisconsin research on the concentrated product.

The Wisconsin Department of Agriculture is cooperating with Pure Milk Association in the test marketing. So is the American Can Company.

Retail marketing of concentrated fresh milk is not a new development. Rural delivery routes in Iowa and Illinois have existed for several years. Some Eastern markets tried merchandising the product with little success.

Currently, a few West Coast markets are experiencing varying degrees of success with consumers. It depends on the price incentive. Consumers are buying more of the concentrated fresh product where there is an attractive differential below the price of fresh fluid milk.

Wisconsin cow prices up

Wisconsin milk cow prices now average higher than a year ago, according to the Federal-State Crop Reporting Service for Wisconsin.

At the average of $170 a head, January milk cow prices in the state were $10 more than a year earlier. Prices gained $5 a head from December to January. Wisconsin milk cow prices are higher than a year ago while the prices received for meat animals average fully a fifth lower than January 1955.

While still low compared with some recent years, Wisconsin milk prices this winter have been equal to or a little over the monthly prices of last winter. Ample feed supplies, some stability in milk prices, and some decline in stocks of butter and cheese in the past year are factors strengthening the price of Wisconsin dairy cows.

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The scraper is easily and quickly adjustable (without use of a wrench) 5 ways: 1. Blade can be angled into 13 positions. 2. Pitch of blade is adjustable. 3. Blade can be tilted, to either side. 4. Blade is reversible for bulldozing and backfilling. 5 Scraper is hydraulically lifted or lowered.

Scraper has curved, 14-in. high moldboard with replaceable cutting edge. Moldboard can be extended to 9 ft. with two 1½-ft. extensions. End plate attachments are also available to fit either extension or regular 6-ft. blade.

Ask your Allis-Chalmers dealer about this new scraper or write to Allis-Chalmers for free illustrated literature.

SNAP-COUPLER is an Allis-Chalmers trademark.

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HELPS BOOST MILK FLOW	Fast action induces cow to let down more milk.
PRACTICALLY NO STRIPPING	Squeezes from very top of teat, downward . . . helps cow deliver full production.
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"CHAMPION" INFLATION	Feel it . . . see for yourself how much more pliable it is! Simulates expert hand milking and encourages complete milk flow.

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How Ed Young solved his worn-out window problem

On Ed Young's Wavellyn Farm near Plano, Illinois, window sash in the calf barn was rotting out, panes were continuously being broken. This made the barn cold in winter and left bedding damp from rain, snow and condensation.

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Northbrook, Illinois

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Quality milk . . . does it cost more to produce?

(Continued from page 291)

to $147 per cow on Grade A farms compared with $134 per cow on factory milk farms. But, because production per cow was lower on factory farms the final labor cost per 100 pounds of milk and per pound of butterfat were both higher for factory farms than for Grade A farms.

Hours of labor per cow on a yearly basis averaged 103 on Grade A farms against approximately 90 hours on factory farms. Time requirements for the specific jobs of feeding and milking were very similar, on a per cow basis. Again, however, because the factory cows gave less milk, the time spent in milking per 100 pounds of milk and per pound of butterfat was higher on factory farms than on Grade A farms.

To make the two sets of dairy farms more comparable, all the farms studied, including both Grade A and factory farms, had stanchion barns.

Labor rates per hour were important. The operators of Grade A farms considered their own time to be worth $1.69 an hour, only slightly higher than the factory farm operators ($1.63). Hired help, however, was a different story. Grade A dairymen paid their hired help an average of $1.04 an hour. Factory milk dairymen, on the other hand, paid only 82 cents an hour.

The seasonal distribution of labor from month to month on factory farms was more uniform than for Grade A farms. During the pasture season, April through September, both Grade A and factory milk producers put about 14.5 minutes on each cow each day. Beginning in October and extending through March, much more time was required because of the extra work on barn feeding and cleaning. During this winter feeding period, many cows on factory farms were dried up; therefore less chore time was required than on Grade A farms.

This falling off in milk production is quite common on factory milk farms in Oregon since there is no particular incentive, as there is on Grade A farms, to push for continued high production through the winter months. Dairymen on Grade A farms strive for more uniform milk production.

Buildings used for the milking herd on Grade A farms were valued by the operators, at the time of the study, at an average of $8,197 per farm. This investment in dairy buildings on Grade A farms was practically twice as high as on factory farms. The $8,197 per farm in no way represents the present replacement cost of the dairy buildings on Grade A farms. It only represents the present depreciated value of the buildings as determined by the operators.

On farms producing factory milk, the present average depreciated value of buildings per farm was only $4,222.

It follows, from the above discussion, that annual costs of dairy buildings on Grade A farms should be higher than on factory farms. This was found to be true per cow, per 100 pounds of milk, and per pound of butterfat produced.

Dairy equipment used for the milking herd on Grade A farms was valued by operators (at the time of the study) at an average of $1,075 per farm. This investment in dairy equipment on Grade A farms was approximately 50 per cent higher than on factory farms ($711). At the time of this study no farm bulk storage tanks were included.

From the foregoing discussion, it follows that the annual cost of dairy equipment on Grade A farms should be higher than on factory farms. This was true per cow, per 100 pounds of milk, and per pound of butterfat produced.

Other costs of production included breeding, depreciation on cows, interest on cows, veterinary and medicine, hauling milk, and miscellaneous. The only significant differences between Grade A and factory farms in this group of costs were in connection with depreciation on cows, milk hauling, and several miscellaneous items including D.H.I.A. dues, official testing, etc.

Depreciation on cows was larger on factory farms mainly because the cows sold from factory farms during the year were sold at a greater loss ($6 per cow), compared with what they were worth at the beginning of the year, than were the cows from Grade A farms. Cow death losses were also higher on factory milk farms.

No attempt was made in this study to compare the total cost of producing Grade A milk with the total cost of producing factory milk. Comparisons have been made rather on important items of cost such as labor, buildings, and equipment wherein considerable differences in costs of production have been presumed to exist between milks of different quality (bacteria content). Omitted from this study has been the actual cost of the feed fed. Usually feed costs make up from 40 to 50 per cent of the total gross costs of milk production.

Looking to the future . . .

The findings of this study suggest positive and constructive conclusions for both producers and consumers.

For individual producers, it suggests once again the outstanding possibilities of reducing costs of production by increasing production per cow. Also, where the market can use more Grade A milk, it may suggest to many factory milk shippers the possibility of fixing up for Grade A. It shows them the way, through higher production per cow and good management, to actually overcome or offset the additional costly investments so often currently required for Grade A production.

And in speaking of these costly building requirements, the study suggests that a closer evaluation of present requirements for Grade A dairy farms might be in order, perhaps **putting less emphasis on buildings and more on the methods used by the operator himself.**

For consumers this study calls attention to the successful fight being waged by Grade A dairymen to produce the finest-quality milk at reasonable costs.

Persons interested in a full detailed report of this study, including pictures, tables, and charts, may write for a free copy of Station Bulletin 551, "Quality Milk —Does It Cost More To Produce?" Address, Bulletin Clerk, Clerical Exchange, Oregon State College, Corvallis, Oregon. **THE END**

DAIRY DIGEST

INTERNATIONAL JUDGES ANNOUNCED

Six well-known judges will officiate at the 4th International Dairy Show, which will be held in Chicago's International Amphitheater, October 6 to 13.

The National Jersey Show, to be held in conjunction with the International, will be judged by W. W. Yapp, University of Illinois. Dean Gordon Cairns, University of Maryland, will judge Ayrshires. Brown Swiss will be judged by Harold Kaeser, Ohio State University. William Hitz, Polk City, Iowa, will judge Guernseys, and Harvey Swartz, Waukesha, Wis., will place the Holsteins. Judge of the Milking Shorthorns will be John Rowe, Davis, Calif.

COLLENTINE RETIRES

Arthur O. Collentine, assistant professor of dairy husbandry at the University of Wisconsin since 1936 and a member of the staff since 1919, has been voted emeritus status by university regents. The regents also approved his retirement as of January 31.

Collentine is widely known for his work with the 4-H club members in Wisconsin, particularly his efforts to promote bull sales by 4-H club members, in addition to his continual emphasis upon the teaching and practice of good farm safety measures. He was concerned with the hazards created by farm animals, and was a constant champion of proper pens, and particularly emphasized the need for well-constructed bull pens.

GUERNSEY MEETING IN PHILADELPHIA

The 79th annual meeting of the American Guernsey Cattle Club will be held in Philadelphia, Pa., and vicinity, May 7 to 10. The Pennsylvania Guernsey Breeders' Association will be host. In addition to farm visits, tours to places of historic interest, and a Purebred Guernsey Sale, the annual business meeting will be held at the Bellevue - Stratford Hotel, May 9.

BECK RETURNS TO KANSAS

Dr. Glenn H. Beck, formerly on the dairy staff at Kansas State College and now head of the dairy department at the University of Maryland, will return to Kansas to become director of the Kansas Agricultural Experiment Station, May 1.

Beck was on the Kansas State staff from 1936 to 1953 when he moved to Maryland to head the dairy husbandry department at the university.

LEARN HOW THIS MACHINE "HARVESTS" MORE MILK

The Lundell Offset Forage Cutter for Green Feeding . . . Cows give more milk. You handle more cows with your labor. You get more green feed per acre. Feed is more nutritious and more palatable. You cut out many problems of pasture rotation, fencing, moving herds, and water. Cows don't tromp down pasture, waste feed and "walk off" milk.

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DAIRY FARM HOME

Try these Easter breakfasts

Here are gay suggestions for Easter Sunday morning breakfast or any other morning in the year.

by Marian Pike

EGG NESTS AND BACON for a festive and appetizing breakfast.

BY NOW you've heard often enough that breakfast is the most important meal of the day. It's true you do break a fast of 12 to 14 hours.

There are all sorts of studies on the breakfast meal in relation to blood sugar values which I could quote you tediously. But the gist of all these studies is that a breakfast of black coffee is not good, and defeats your purpose even if you are trying to lose weight.

Nutritionists agree that breakfast should supply your body with energy and protein foods to give you a good start on the day. This means plenty of dairy foods and good protein foods like the traditional bacon and eggs.

The breakfasts pictured are more festive than the ones I achieve every morning. But it does pay to plan breakfast the evening before and rise a little early so the family is not harried and hurried but goes off to school and work with good energy foods in their stomachs rather than a chip on their shoulders.

Pictured above is an attractive platter of egg nests and bacon. Nutrition authorities say that bacon should not be frozen. But those of us who have our own hogs butchered at the locker know that we do freeze bacon. We find it not ideal, of course, but satisfactory.

If you are buying bacon though, buy what is a useable quantity for your family; store it in the original wrapper, covered in the refrigerator, and use it up within a week.

Lately I've been having success with **not** pouring off the drippings as I pan-fry bacon. The fat helps float the slices, browning the bacon without raw or burned spots. I drain it on newspaper for economy, but it is better to drain it on those soft paper towels.

Some of us hate to heat up the oven just to fry a little bacon, but when you're serving bacon in quantity, oven baking is the answer. Place each slice separately on a wire rack set in a baking pan and bake in a hot oven (400 degrees) about 10 minutes. It browns on both sides without burning. It burns up if you forget it, too.

Those egg nests shown, could be poached eggs, are fun to try. Separate the eggs, keeping each yolk whole and separate. Beat whites until stiff but not dry, seasoning with salt and pepper. Then make a nest of whites on a slice of buttered toast, allowing one egg to each slice of toast. Drop an egg yolk in middle of each. Bake in a slow oven (325 degrees) for about 15 minutes.

If you want to invite friends to brunch after church on Easter Sunday, the oven-baked ham and eggs shown below is the dish for you. You can fix the casserole before going to church. When you return, slide it into the oven while you are preparing the fruit and beverages.

Oven-baked Ham and Eggs

4 tablespoons butter
4 tablespoons flour
½ teaspoon salt
2 cups milk
1 cup dry bread crumbs
¼ cup melted butter
6 hard-cooked eggs, sliced
1 cup cooked ham, diced
1 small can mushrooms, drained
Paprika

Melt butter; blend in flour and salt; add milk gradually, stirring constantly. Continue to cook until sauce is smooth and thickened. Blend crumbs with the ¼ cup of melted butter.

In a buttered casserole, alternate layers of crumbs, eggs, ham, mushrooms, and sauce, topping with crumbs. (You could substitute 1 or 2 tablespoons of green pepper or pimiento for the mushrooms.) Bake in a moderate oven (350 degrees) for 25 minutes. May take 45 minutes to brown if casserole is cold.

The pancakes shown needn't be limited to the morning meal. Cut in wedges, they can even be used as dessert at luncheon or supper.

Many of us inevitably use mix for our pancakes. But every time you reach for a box of any kind of mix, consider whether the saving in time is worth it against the money.

It's an individual problem and depends on the state of milk and eggs in your own larder. You aren't always saving money if you stir things up from scratch.

Swedish Pancakes

1¼ cups sifted flour
2½ tablespoons baking powder
1 teaspoon salt
1 tablespoon sugar
1 egg beaten
1 cup milk
3 tablespoons melted butter

Sift flour and measure; sift with baking powder, sugar, and salt. Add beaten egg to milk; stir in melted butter. Add liquid all at once to flour mixture, beating only until smooth. Pour onto a hot greased griddle. Cook until top is puffed and full of bubbles. Then, turn and cook on other side. Serve hot with currant butter sauce. Makes about 8 large pancakes.

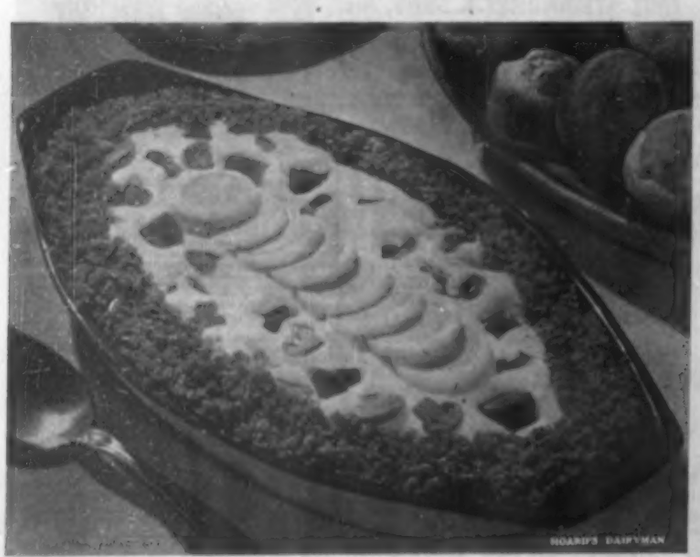
Currant Butter Sauce

Melt **3 tablespoons butter** in saucepan. Add **1 cup currant jelly** and heat slowly while stirring until mixture is blended. Serve hot with Swedish Pancakes.

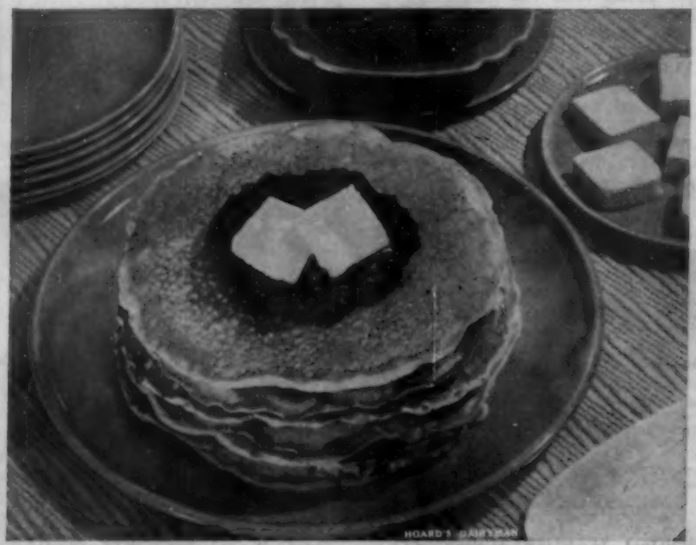
Honey Butter Spread

Beat **½ cup (1 stick) soft butter** with rotary beater or mixer. Slowly pour in **½ cup liquid honey**, beating all the time. This is a good spread to use on pancakes, toast, or after-school snacks.

THE END



OVEN-BAKED HAM AND EGGS may be prepared well ahead of time.



SWEDISH PANCAKES served piping hot with Currant Butter Sauce.

From Day to Day

by Lois J. Hurley

FARM and Home Week at our university this year sent me home with renewed determination to do something I've long known I should and could do to make my homemaking chores simpler and more pleasant. That's the shifting about of food preparation materials, cooking utensils, dishes, food, etc. within the present cupboards and storage spaces.

No kitchen, it matters not how new and modern, ever turns out to be just absolutely everything we'd hoped for in convenience and efficiency.

Sometimes our problem may be solved by buying two of items that may be needed in two places in the process of preparing, cooking, and serving food. A knife rack somewhere in the kitchen is fine, but maybe it would be handier to scatter the knives about.

Mix centers are pretty well organized, it was found, but stove centers could be improved. Here are some items that should be within three feet of the center of your stove, if you would save yourself many a step:

Pot holders, frying pans, sauce pan for cooking cereals or preparing canned vegetables or soups, platters and serving bowls, serving spoons, meat fork, potato masher, turner, stirring spoon, salt, pepper, and flour for gravy and seasoning, canned vegetables, a can opener, cereals that must be cooked, coffee, cocoa and tea, and a set of measuring cups and spoons.

Keep a few days supply of potatoes at the sink; also a garbage can and temporary tin can storage box there, too. And, use a tray or cart to set and clear the table.

Country culture . . .

I'm not too familiar with other states and their organized cultural activities, but each year, Farm and Home Week audiences at Wisconsin are shown spotlights from efforts of our department of agricultural extension education to encourage and develop rural writers, artists, actors, singers, and craftsmen.

With rare exceptions, this is a program that, in my opinion, has had and is having, a hard time in "getting its feet off the ground." Outstanding among the offerings are the nationality dances and songs of the Scandinavian groups, who contributed much to early days of Wisconsin history. But, does that reflect state culture, or is it merely an echo of folkways of the lands across the sea from which these fine people emigrated?

A rural writer should write what he or she feels like writing; can it only reflect immediate environment? Can an artist really develop by painting only what is within the borders of a state? Can a singer sing only ballads that grew up within a locality? Many localities have none. In other words, just how do you boundarize a culture?

Our senior citizens . . .

Meeting the problems of the aged was the subject of a program session at Farm and Home Week that drew a capacity crowd. Dr. Charles Lively, from the University of Missouri, was the headline speaker and he summarized the problem as having a two-part solution: What the individual does to prepare himself for the years of physical decline and what society does to recognize and provide for the aging.

"Let us think of them as 'senior citizens' and not 'old people,'" said Dr. Lively, who has himself reached that age of classification. "And, are they really through, productively, at 65? After that, are they to be among us but not of us?

"We have tended to glorify youth and place a premium on its strength to bear the burden of labor. But machines have shouldered a great share of this burden and science has taken over many other jobs. Thus aided, senior citizens may still function effectively. In fact, there are many places where their knowledge and skill and patience are more highly desirable than mere brawn.

"All of us should begin by the time we are 25 to prepare for our own means of retirement, if we possibly can," Dr. Lively advised. "At the present time, however, it appears that the majority of our population cannot take complete care of themselves in the senior years and what our so-called 'age of plenty' will do about this remains to be seen."

A documentary film pointed up the fact that children scatter and it is hard to get them to assume responsibility for aging parents in this day of high costs of living, small homes, and swift-paced life. Older folks do not adjust into the homes of their children happily. To get into "old peoples' homes" they must often take paupers' oaths. Once in such "homes", they are doomed to a life of sitting out their years in sickness and idleness. They deserve better than this; it is the challenge of our modern age to see that they get it.

It's the truth! . . .

Since 1885, the Wisconsin College of Agriculture has run "short course" terms in agriculture each winter where boys who, for one reason or another, couldn't go to college for four years could get a few weeks or months instruction in scientific farming and livestock breeding. The current term enrolled boys from 51 of our 71 counties, two other states, and one foreign country.

Preceding one of the morning general sessions which dealt with the weighing and discouraging problems of our staggering farm surpluses and what to do with them, these short course boys sang on the stage of the Union Theatre in a group chorus. Dressed in everyday garb of jeans and flannel shirts, they stood before massed American flags backgrounded by a sky-blue backdrop and sang, under excellent direction, "Where in the World but in America?"

It was a spine-tingling experience. You sensed that those sitting hushed around you in the big Memorial Theatre were touched as you were touched. It was the voice of American youth, raised simply and unaffectedly, but wholeheartedly in expression of appreciation for opportunity.

There's lots wrong with our way of life, but there's still lots that is right, too. "Where in the world but in America, can you sing true Freedom's song?"

These boys expressed true Wisconsin . . . true American culture, if such there be! It is freedom!

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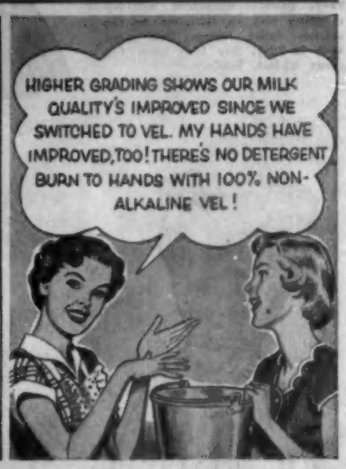

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9342. Double diagonals are so slimming and so flattering to the shorter, fuller figure. Half sizes 14½ to 24½. Size 16½ takes 4½ yards 35-inch fabric.

9296. Iron strawberries in combination of red and green on this adorable sundress. Princess style, button-on bolero. Child's sizes 2, 4, 6, 8, 10. Size 6 dress takes 1⅞ yards 35-inch; transfer of 15 color motifs.

4743. Wear this versatile style as a terry-cloth beachcoat, apron, or sports jerkin. Make it a full-length sundress, too. Misses' sizes 12 to 20. Size 16 shorter version takes 2¾ yards 35-inch.

9085. The soft summer dress is ideally feminine and always flattering. This graceful version has soft gathers at yoke and skirt. Misses' sizes 12 to 20. Size 16 takes 4½ yards 35-inch fabric.

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Easter customs: How come?

No one knows when custom of dyeing eggs began. "Dressing up" dates back to the fourth century.

by Erma Reynolds

WHILE you're mixing the dyes to color the youngster's Easter eggs let me tell you a surprising fact — folks were coloring eggs thousands of years ago!

The custom of dyeing eggs is so ancient no one actually knows when it started. The very early records describe hard-boiled eggs with decorated shells that were prepared by the Jews. The early Persians had colored eggs, and even the Druids were supposed to have used colored eggs in their weird ceremonies.

The practice of coloring eggs probably started when the ancient folk, inspired by the beauty of spring flowers, tried to copy their lovely colors on their symbolic eggs by performing a dye job. Years later, when the custom of Easter eggs was adopted by the Christian church, eggs were usually colored with red dye to symbolize the blood of Christ.

Easter, day for fun . . .

Colored Easter eggs were introduced to our own country by the early settlers, particularly the Dutch in New York and Pennsylvania. Easter, which they called "Pasch" was a day for fun and included egg-rolling contests.

Easter eggs have been used in fascinating ways by different countries and persons throughout the Christian era.

In England, in the early days, the people had elaborately-decorated eggs blessed by their priests and then carefully saved them as good-luck talismans.

In France, Easter eggs served as a barometer of love when sweethearts would present each other with dyed eggs bearing inscriptions of their devotion. The eggs would be hidden away for a few days and then brought out for examination. If the colors had remained bright, it meant that their love would last forever, but if they had faded, it prophesied that their love would not last.

At one time the custom of presenting colored eggs as gifts was a general practice. These eggs were colored and decorated with intricate designs. Sweethearts would use them like Valentines, inscribing sentiments of love. During the peak of this fad, the demand was so great for these unique gifts it enabled the commercial creators of decorated eggs to secure fabulous prices for them.

The delightful custom of hiding Easter eggs for children can be traced back to the days of the Teutons. Even those early-day youngsters believed in the Easter bunny, for they were told if they were good the rabbit would leave colored eggs for them on Easter Eve. When they wakened on Easter morning, there would be the eggs, hidden away in odd nooks and corners, as we do it for our children today.

Egg rolling not new . . .

It has been an annual custom in our own country to hold an egg-rolling party on the White House lawn on Easter Monday for thousands of children. But we can't claim the credit for inaugurating this gay entertainment, for there were egg-rolling parties in the early days of England. During Easter week the children would exchange hard-boiled colored eggs and after the eggs were distributed, the youngsters would proceed to roll them down a hill until the shell was broken. The child whose egg held together the longest was the winner of this contest.

Of course, Easter is not complete without the Easter bunny. The symbolic rabbit can make a choice of his ancestry. One legend holds that he got his start in Oriental mythology when the hare was the symbol of the moon. This early rabbit was born with his eyes open, which made him like the ever watchful moon, and we tie him in to our present day Easter bunny by the fact that the date of Easter is determined by the lunar cycle. The second legend, which is probably Teutonic in its origin, advances the whimsical theory that rabbits lay eggs on Easter Eve.

Have you new finery for Easter? Did you know that "dressing up" for Easter is a custom that dates back to the early days—the fourth century to be exact? Constantine, Emperor of Rome, loved the ostentatious, including his own appearance. Easter ceremonies were simple until Constantine turned his attention upon them and decided that they should be observed with more pomp and color. To his vain mind, the occasion was an opportunity for him to show himself so richly dressed in new and unusual attire that he would cause everyone else to look like shabby shadows in comparison. But human nature, being as it is, the folks about him were not content to be shabby shadows, and they too began to "dress up" for this special day, which started the custom of wearing new clothing on Easter.

New bonnet meant happiness. . .

Early England had quaint superstitions about "dressing up" for Easter. If a person wore something new for the annual celebration, it guaranteed good luck for their love affairs during the year. Easter bonnets were inaugurated from the superstition that if a lady wore a new bonnet for the first time on Easter Sunday, it assured happiness for her love affairs during the year.

Hot cross buns are a tradition of Good Friday. People in the olden days believed that if they ate hot cross buns on Good Friday, it would prevent their house from being burned during the year.

The flowers that we give for gifts at Easter and use to decorate our churches have been a part of Easter since the beginning of Christianity, serving as emblems of the Resurrection. Years before the start of Christianity, the coming of spring was celebrated with flowers, with the people wearing them as wreaths and garlands and decorating their pagan altars with offerings of the first spring flowers.

Music is also an important part of Easter and here again we learn that the ancients first enjoyed this symbol thousands of years ago, when the earliest Easter hymn was written by St. Ambrose about the year 340.

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POULTRY

by H. H. Alp

Figuring your chick brooding needs

FOR replacement chicks I would suggest following the rule of 4 chicks per square foot of floor space. This recommendation is based upon the assumption that they will be given range at approximately 6 weeks of age.

This would mean that if you are planning to brood 500 chicks, you would need a brooder room of approximately 12 x 12 feet.

Number of brooders . . .

If facilities permit, it would be best to allow not more than 350 chicks per brood. However, under good care and management this number could be increased to 500.

What kind of litter? . . .

The amount of litter will depend to a large extent on the kind used. If a straw-type litter or ground corn cobs are used, the depth of the litter should be about 3 inches.

In the event the floor of the brooder room is not of double-type construction with insulating paper between the two floors, then the amount of litter used should be increased so as to provide some insulation against drafts and cold floors.

Amount of brooder fuel . . .

Obviously the amount will vary with weather, type of stove used, construction, number of birds, etc. The following figures, however, are sometimes suggested as being typical of daily average fuel consumption.

Coal	17 pounds
Oil	2.5 gallons
Gas	3 gallons
Electricity	3 to 4 kilowatt hours

Number of feeders . . .

(1 to 4 weeks) one 4-foot feeder for every 100 chicks, of the type that would permit chicks feeding from either side.

(4 to 8 weeks) two 5-foot feeders per 100 chicks.

(8 weeks to maturity) two 8-foot feeders for every 100 birds.

Number of waterers . . .

(1 to 4 weeks) four to five 1-gallon type waterers per brooder room, or per 300 to 400 chicks.

(4 to 8 weeks) one 5-gallon container or its equivalent per 100 chicks.

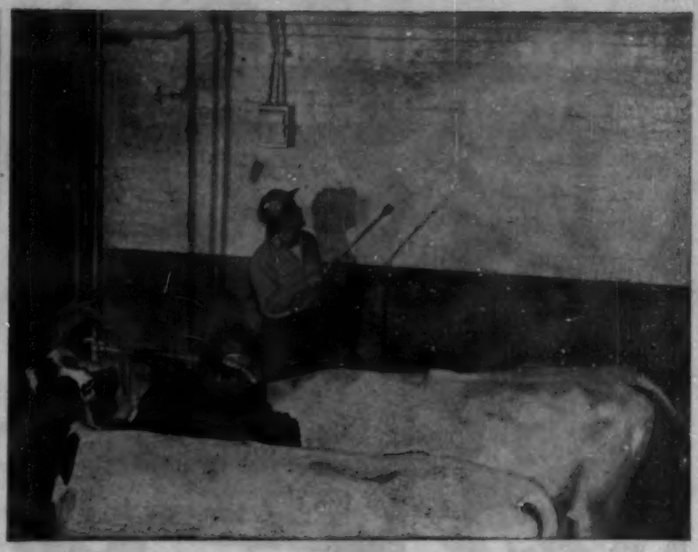
For older and more mature birds, change to automatic watering equipment.

Feed required . . .

100 chicks will eat about 10 pounds the first week and 10 additional pounds each week during the first 10 weeks. To grow a pullet to maturity, it will require approximately 25 pounds of feed.

Roosting facilities . . .

I would strongly recommend providing four roosts, properly spaced across one end of the brooder room. Early roosting prevents crowding, over-heating, and chilling, and has a tendency to prevent the start of bad habits such as feather-picking, etc.



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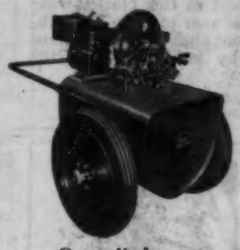

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ARTIFICIAL BREEDING

Make grant to study glass vs. plastic

The New England Council of Artificial Breeders has granted a sum of money to the department of animal industry at the University of Maine for further research in the handling and storing of frozen semen, according to an announcement by Dr. Howard C. Dickey, head of the department. This is the fourth year that such a grant has been made by the council for research in Maine.

The research will be carried on by Dr. Harry H. Brugman of the Maine Agricultural Experiment Station and his graduate assistant, Robert P. Schmidt. Brugman has been a pioneer in research on methods of handling frozen semen.

Storage chests developed and built under his direction are in use in several New England experiment stations, breeding cooperatives, and on privately owned dairy farms in Maine. The storage chests utilize alcohol and dry ice to maintain nearly constant temperatures as low as 72 to 76 degrees below zero.

Dr. Brugman and Schmidt will use the new grant to determine the relative merits of the plastic and glass ampules in which semen is sealed in the extremely low temperatures required for long-time storage. They will also seek new information on the fertility of sperm taken from bulls under varying conditions.

Electronic sperm cell studies

A project aimed at improving dairy cattle through electronic studies of the fertility of cattle sperm cells used in artificial insemination has been undertaken by the University of Illinois with the cooperation of Allen B. Du Mont Laboratories.

The project seeks to establish standards for judging specimens of sperm cells to determine which are superior from the standpoint of fertility and to devise electronic means for quickly selecting the specimens which meet those standards.

The fertility studies are being conducted under the supervision of Dr. Noland L. VanDemark, professor of dairy physiology at the University of Illinois, and Carl Berkley, Special Products Section Manager for the Technical Products Division of Du Mont.

Dr. VanDemark and Mr. Berkley have devised methods for staining the sperm cells with dyes without hurting them or otherwise affecting them. This permits the cells to be studied electronically by methods akin to television.

In studying sperm cells, the problems are (1) to find what percentage of sperm cells in a specimen are moving, at what speeds they move, and how far they move; (2) to count the number of sperm cells; (3) to determine what percentage of cells in a specimen are alive and how long they stay alive under various treatments.

When this information becomes quantitatively and qualitatively available by means of electronic testing, graphs can be prepared which it is hoped will permit dairy cattle breeders to determine the fertilizing capabilities of the sperm cells.

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These Kentucky farmers . . . plant sorghum with corn for silage

In dry years, sorghum provides enough moisture for good silage. Yields are higher, too.

by A. B. Sawyer, Jr.

SEVERE drought conditions in recent years have caused more Kentucky farmers to plant sorghum with corn for silage. One reason for doing this was to secure increased yields. Another was to insure enough moisture to make good silage when the corn stalks were too dry.

In at least one instance, sorghum was planted after army worms had destroyed part of the corn. Paxton Marshall, who manages the Wave Farm in Jefferson County, has this to say about that experience: "The corn was almost knee-high in 1954 when the army worms appeared in it. I sprayed the field with toxaphene, which killed the worms, but not before they had destroyed probably half of the corn. I then planted about six pounds of Hegari sorghum making the rows as close to the corn rows as possible.

"We harvested the crop with a machine which husked the corn and chopped the stalks for silage. The sorghum stalks were green enough to make good silage, even though the corn stalks were very dry. We wintered our beef cows on the silage, and they did well on it.

"If we had needed the silage for dairy cows, we would have chopped ears and all at an earlier date and had excellent silage."

Yield 30 per cent higher . . .

The next year Mr. Marshall planted corn for silage about the middle of June, at the rate of about 14,500 stalks per acre. He then planted about six pounds of Hegari, in the same rows. (He thinks that perhaps Atlas or some other variety of sorghum might have been better.)

Rainfall was fairly adequate until the latter part of July, but there was none from then until after the crop was cut, about September 20. By the time the corn had begun to dent the stalks were dry, but the sorghum had sufficient juice to make good silage. Mr. Marshall says the yield was at least 30 per cent above what the corn alone would have made.

A. D. Crenshaw, of Oldham County, also planted sorghum with silage corn. Silage cutting was delayed to build an extension onto his silo, and the cornstalks got very dry. The sorghum, however, was still green enough to make good silage without adding water. The corn was damaged by late summer drought, and Mr. Crenshaw estimates his total production was increased at least 25 per cent by planting sorghum with the corn.

> **Save for gold, jewels, works of art, perhaps good agricultural land, and a very few other things; there ain't no such animal as a permanent investment.**
>
> **—Bernard Baruch**

He mixed the sorghum with the corn in the planter box, but this year plans to mix it with the fertilizer as some of his neighbors have done. The mixture of corn and sorghum requires very frequent stirring, as the sorghum seed tends to settle to the bottom of the box.

Right time to cut . . .

Another Oldham County farmer who planted sorghum with corn for silage was John Moser. He said he harvested the crop too early, thinking the corn was drier than it really proved to be. Therefore, the quality of silage was not as good as it would have been had he waited until the sorghum had become more mature. A better stage for making silage from sorghum is when the seed is becoming hard and ripe.

Sorghum has been planted with silage corn for years in Spencer County, as reported by Nevin Goebel, county agricultural agent. In recent drought years the practice has become more general.

This is also true in many other counties in Kentucky. Farmers have learned if the sorghum is allowed to mature sufficiently, the quality and yield of silage from this mixture is good in years of normal rainfall. In unusually dry years, the sorghum is of much greater value.

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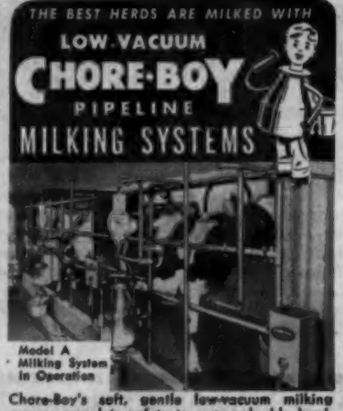

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YOUNG DAIRYMEN

BASIC FARM PRACTICES

Know symptoms and control of ketosis

Ketosis is a non-infectious disease of dairy cows. The symptoms should be familiar to us. In some ways it resembles milk fever because it usually occurs in high-producing cows. Also, the most severe cases occur 10 days to 6 weeks after calving. It is sometimes called acetonemia.

This disease may last a month or more and is more common in older cows than in heifers. A cow that once has ketosis is likely to have it again after her next calvings.

The symptoms to watch for are loss of appetite and constipation. Milk production decreases markedly; the cow loses weight and becomes unthrifty. There may be nervous disorders that can either cause her to appear wild and nervous or cause her to be depressed, to arch her back, and to walk stiffly.

You can smell acetone on her breath, in her urine, and even in the milk. This chemical has a sweet odor, and once you recognize it, you will detect it easily.

Ketosis is a difficult disease to diagnose. It usually starts slowly so you may not notice it until the cow has been sick for some time. A rapid field test called the Ross test can be run on the urine and if acetone is present, it will cause a purple color to form when the urine is mixed with the chemical used in this test. However, many cows will give a positive Ross test without having clinical ketosis. We also know that blood sugar levels drop severely.

Many treatments have been used, and much research is being done to find effective preventives and treatments. Since blood sugar is low, most treatments aim at increasing blood sugar levels.

Small amounts of sugar or molasses fed daily after calving may be beneficial, and veterinarians may inject sugar solutions as a treatment. A hormone from the adrenal gland to increase blood sugar levels is also used.

Propionate feeding has proven of benefit, too; again this compound helps to return the blood sugar levels to normal, and to reduce the ketones (of which acetone is one) in the blood. Acetate has been used in a similar manner as propionate. Both of these compounds are found in the rumen contents of cows and result from fermentation that occurs there.

One factor that has made study of ketosis difficult is that cows will recover without treatment at times, and you are never sure whether or not the treatment was effective.

KETOSIS symptoms — unthrifty, depressed, arched back, stiff walk.

Little is known about the prevention of ketosis at the present time. Most cows will respond to treatment with very little loss in production if they are treated early. Therefore, the best way to keep ketosis under control is to catch the disease in the early stages. Watch the high-producing cows closely for symptoms of ketosis especially during the first 6 weeks of lactation.

—J. W. Crowley
—R. P. Niedermeier

Training and trellising raspberries

The best system of training raspberries depends on the type of raspberry and their manner of growth. Red raspberries are most commonly grown in a narrow row or in hills.

Red raspberries in rows are generally planted about 2 feet apart. The new shoots or suckers are allowed to grow and fill in the space between plants. If hills are desired, they are generally planted 5 by 5 feet or even 4 by 4 feet and then kept in hills.

A trellis for a narrow row can be of several designs. Use permanent posts of metal, concrete, or treated wood spaced at intervals down the row. Between the posts stretch heavy-gauge, rust-proof wire. A single wire, 2 wires at different heights, or 2 wires at the same height can be used. If two wires of the same height are used, they can be 3 or 4 feet above the ground level.

The raspberry canes can be placed between the wires to avoid tying. If only 1 wire is used, the canes must be tied to the wire. A temporary trellis can be erected during the growing season using stakes and binder twine. The stakes are set at about 15-foot intervals and the twine run from stake to stake on both sides of the row. If the canes are heavy, it may be necessary to tie the twine together at intervals.

When red or purple raspberries are grown in hills, it is advisable to set a permanent-type stake about 6 inches from the hill. The canes can be tied to the stake. Temporary stakes can be driven each year; however, this method is costly and often results in broken canes.

Black raspberries when properly grown do not need support. All other types should be trained to a trellis to avoid wind damage and to provide greater ease of picking and pest control.

—G. C. Klingbeil

BARNEY FARMLAN

"You'd think my calf would stand still when I try to improve his coat."

How should youth groups sell rat bait?

Many 4-H and F.F.A. groups earn money by promoting rat and mouse control programs. This is a commendable public service, and an educational experience for the members. In addition, of course, money and awards may be earned.

There are some dangers in selling rat bait. According to E. H. Fisher of the University of Wisconsin, youth groups should not **mix and sell** rat baits because:

1. Such a practice will probably violate labeling laws governing economic poisons. Most states have such a law. There is a federal law which would affect interstate movement of the bait.

2. The youth group, its advisor, or the individuals of the group may incur product liability based upon **alleged** injury to persons, livestock, poultry, or pets, resulting from the use of the product. The danger of such product liability is increased if labeling regulations have not been followed. Normally, the youth group, its members, and the advisor would have no insurance protection in such a situation.

3. Mixing and selling bait may create poor public relations with established dealers in the area. These people stock rat baits to supply the year-around demand. These same dealers help support education and youth group activities through taxes and contributions.

4. When dealers have supplies of the best rodenticides, there is no need for any governmental agency to sell bait, directly or indirectly.

According to Fisher, there is a legitimate, ethical way for a youth group to earn money by selling rat bait. The group should seek the cooperation of all bait dealers in promoting the rodent control program.

Suggest to these dealers that the youth group members will take bait orders from farmers and home owners, allowing the buyer to indicate from which cooperating dealer the bait should be purchased. The dealer would contribute to the youth group a previously agreed standard percentage of total sales.

Self-feeder bait stations could similarly be sold. Appropriate order blanks should be made out in triplicate, one copy each for the customer, the dealer, and the youth group.

4-H and F.F.A. groups can sell rat bait in a businesslike manner. "By so doing," says Fisher, "they avoid illegal, unethical, and liability complications."

Ohio and California experiments show that heavy equipment moved too often over a field plugs soil pores, breaks down soil structure, slows aeration, and reduces root penetration.

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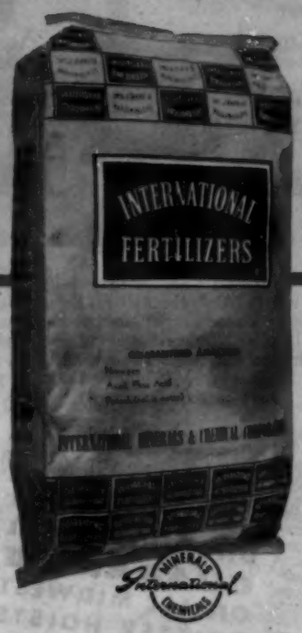

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SWINE

by R. H. Grummer

Meat-type is profitable

ANY question that any of us might still have concerning the economy of growing a meat-type hog should soon be cleared up. Experiments have been conducted in most hog-growing states using almost every kind and breed of hog. The answer comes out about the same every time; the meat-type is the profitable type. The following are two recent reports coming from Ohio and Illinois:

"Farmers can produce high-quality, meat-type hogs as cheaply and efficiently as they can non-meat type," preliminary work at the Ohio Swine Evaluation station indicates.

Based on 420 pigs representing 210 litters from fall, 1954, and spring, 1955, crops (the first two crops at the station) results showed the following, according to W. H. Bruner, Ohio State University swine specialist:

1. Pigs from superior litters (8 or more pigs raised per litter in litters with inherent ability to make rapid and efficient gains and produce superior carcasses) had a tendency to be heavier in weight at 63 days of age than did pigs from non-meat-type litters.

2. There was no significant difference in rate of gain to market weight of 210 pounds. Pigs from superior litters gained 1.69 pounds per head daily; those from non-meat-type litters, 1.68 pounds.

3. Pigs from superior litters used 17.3 pounds less feed to produce 100 pounds of gain than did the non-meat type. Based on feed prices at the time of the demonstration, this represented a saving of approximately $1 per pig.

4. Pigs from superior litters carried 2/10 of an inch less back fat than the non-meat type.

5. Loin eye measurement at the tenth rib for pigs from superior litters was 4.12 square inches, compared to 3.29 square inches on the non-meat type.

6. Pigs from superior litters carried 3½ per cent less live weight in fat trim and approximately 3.7 per cent more live weight in primal cuts.

Bruner reported these findings to Ohio hog producers at the Ohio Swine Improvement Association meeting on the Ohio State University campus recently. The swine evaluation program provides a 108-pen station where breeders may have two pigs per litter fed and managed under uniform conditions.

The program was developed in recent years by Ohio hog producers and is carried out through facilities of Ohio State University's meats laboratory and the Swine Evaluation Station. It is under the direction of the Agricultural Extension Service with the Ohio Agricultural Experiment Station cooperating."

"Lean-type hogs grow as cheaply as fat-type porkers," according to G. R. Carlisle, livestock extension specialist at the University of Illinois College of Agriculture.

Carlisle says figures from the Forrest Swine Test Station in 1954 showed little difference between fat and lean hogs so far as rate and costs of gain were concerned.

More recent research indicates that, if any advantage in cost of gains exists, it favors lean hogs.

The Ohio Swine Evaluation Station fed two pigs from each of 108 litters separately to compare costs. The lean hogs, which would grade U. S. No. 1 on the market, required 334 pounds of grain to put on 100 pounds of gain. Fat hogs in the test, grading U. S. No. 2 and 3, needed 358 pounds of feed to put on 100 pounds of gain.

Average daily gains in the test were 1.67 pounds a day for lean hogs and 1.69 pounds a day for fat hogs.

Testing old 2,4-D

How do you test 2,4-D to see if it's fit to use after it's been stored a few months—especially where temperatures are low? K. L. Blanchard, agronomist with the Minnesota Department of Agriculture, gives these rules.

First, open the container and let its contents come to room temperature. Then, stir it with a clean metal or glass rod and feel for any resistance—that is, crystalline formations, oil globs, or heavier bottom layers. If you note any of these things, it's especially important to test the material.

Here's how to test esters:

1. Pour a cup of water into a clean pint fruit jar.

2. Add five teaspoonfuls of the ester concentrate. Shake the 2,4-D container well before you take this sample, of course.

3. Screw the cap on the fruit jar and shake it well for a few seconds, turning it upside down and back about a dozen times. Then set it aside for two hours.

4. Then examine the jar for an oil layer or surface globules. If you see oil, the material has "gone to pot" and shouldn't be used.

5. Watch, also, for cream formation. You should have just a thin layer of cream on the top—not over one-eighth of an inch. If you see cream, turn the jar upside down several times. If the material looks the same all through, it's all right to use.

To test amine forms in hard water:

1. Fill a clean pint fruit jar with water.

2. Shake the amine container well; then add five teaspoonfuls of the amine concentrate to the water in the jar.

3. Cap the jar and shake well for several seconds, until the solution appears the same all through. Then set it aside for two full days.

4. At the end of two days, check the jar for crystal formation on bottom or sides, gummy material collecting on the bottom, and suspended particles of material. If you see any of these conditions, the material should not be used.

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Dr. Naylor Dilators act both medically and mechanically to maintain free milk flow through the canal of hard-milking teats. They give gentle, non-irritating support to injured lining of teat canal—keep end of teat open to promote normal healing—natural milking.

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Measured rations of feed slide from overhead bin to manger with the turn of a handle. There's no leakage, no clogging. Louden Measure-Matic takes any type ground feed. Used with Louden Tandem or Lane-Type Stalls. No expensive connections required for use with overhead bin. Can be used without bin, hopper will hold 10 gallon feed supply. Easy to clean, no sharp corners. Saves steps and time. Saves feed.

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H. C. Davis Sons, Box HA-195 Bonner Springs, Kansas

BARN, consisting of milking parlor and milk house, is 9 by 18 feet.

Builds low-cost Grade A dairy barn

With home labor, this two-stall, walk-through milking parlor and milk house could have been built for approximately $500.

by Durell Davis

ARE you planning to build a new dairy barn? Or are you worrying over the cost of remodeling your present barn? If you are, maybe W. H. Burns, Winston County, Alabama dairyman, has an idea you can use.

When Mr. Burns was considering switching to Grade A milk production five years ago, the problem of getting a barn that would do the job, pass Health Department regulations, and not wreck his farm budget, was his major concern. "My herd is small, only 14 cows, and I didn't feel that I could afford to put too much into a barn," he says.

"And, too, I wanted a barn that would cut down on labor as much as possible."

The barn is a "walk-through milking parlor" built of concrete blocks and native lumber. The milk-cooling room is conventional style and covers a little more than half the entire barn area. The cooling room is 9 by 10 feet.

The dairyman works from a spot near the center of the milking parlor. Cows come in two at a time and the dairyman milks them by machine. When the cows are milked, he reaches up and releases the door ropes. Springs on the outside of the doors pull them open and the cows go directly to the loafing pasture. Another rope near the "spot" operates the door that lets in two more cows to be milked.

All of the milking operation is done without the dairyman having to move from his tracks. Cows feed during milking from troughs built in the doors. Any additional concentrate needed by the cows is fed in large feeders in the loafing pasture.

After milking is completed the entire barn, including milking parlor and cooling room, can be cleaned and washed down in about 20 minutes, without hurrying. Milking and cleaning take a total of about 1½ hours for the 14-cow herd.

"I had the barn built on a contract basis," says Burns, "but it could be built a lot cheaper. With home labor the barn could be built for $500, maybe a little less."

Mr. Burns has been using the barn for five years and he has only one complaint. "I should have built it long before I did," he declares.

Why Jim Sugden swears by his new "Kold-Pak" farm tank

Let Jim Sugden, R.F.D. #2, Mukwonago, Wis., tell you about his 200-gallon Cherry-Burrell "Kold-Pak" Farm Tank. He can do it better than any professional.

"Low pouring height is its biggest advantage. My wife feels it's the easiest-to-clean tank we have seen. It's so low. We were worried about milkstone build-up, but haven't had a bit of it.

"Your direct-connected refrigeration system was mighty easy to install and hasn't caused us a bit of trouble.

"Our milk hauler tells me this is the best draining tank on his route.

"We are glad we bought a tank with vinyl plastic finish because it doesn't water-spot—keeps its clean, new look.

"*I'd buy another Kold-Pak.*" (The italics are ours. And thank you, Jim.)

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Experienced Sale Managers use Hoard's Dairyman extensively to advertise their sales of good cattle. They KNOW that it pays.

SPECIAL OPPORTUNITIES

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The rate for advertising in this department is 20 cents per word per insertion, except for "help wanted" and "position wanted" advertising which is only 20 cents per word per insertion. Count address. "J. W. Foley, Route 13, Green Bay, Minnesota," is considered as eight words. Blind advertisements must be signed: "BOX ☆, care Hoard's Dairyman, Fort Atkinson, Wisconsin" and count as 5 additional words. Count each initial or group of figures as a word. SEND CASH OR CHECK WITH ORDER. Copy must reach us four weeks ahead of date of issue. NEW ADVERTISERS MUST FURNISH REFERENCES. Send order to HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin.

DAIRY CATTLE

KENYON Brothers Farm serving the dairy farmer for forty years. Large selection of choice Holstein cows and first call heifers, fresh and close springers, service bulls, T.B. and Bang's tested. In carload or truckload lots. KENYON BROTHERS CO., Elgin, Illinois. Phone Elgin 1618. 1-*

ATTENTION dairymen and cattle dealers. We can furnish you Holstein heifers to freshen this fall. Cows of all breeds. Let us know your needs. We can supply them. BOTTEMA FARMS, Bridgeport, Ind. Plainfield 8266. 20-*

KEATING Brothers Farm offers large selection fresh and springing selected cows and heifers, strictly quality. Dairymen—buying on order will save you time and money. Call or write Fort Atkinson, Wisconsin. Telephone 414. 16-*

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HOLSTEINS and Guernseys—Large selection of choice springers and fresh cows and heifers. TB and Bang's tested. STANLEY BURNIDGE & SON, "Grand Hotel for Dairy Cattle," Elgin, Illinois. (Hotel accommodations). Established 1918. Also good selection at Claremore, Okla., Branch—Phone: Claremore 116. 1-24

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FOR Sale—Registered Holstein herd, mostly Burke and Admiral breeding. 38 cows $350 each, producing 850 lbs. per day. 3 daughters of King Admiral Fobes Juie; 5 daughters of Twelveima Man-O-War Burke. Also other popular bulls represented. 12 heifers bred to freshen this fall at $350.00 each; 12 calves under 12 months at $150.00 each. One herd sire, son of Franio Gan Treasure Model. 20 of the calves and heifers are daughters of this bull. All calves over 4 months old are vaccinated. Will sell all or any part. For further information write T. A. HUDGENS, Horn Lake, Mississippi. 5-2

CHOICE Holstein and Guernsey dairy heifers from 350 to 900 pounds. Holsteins 12c per pound and Guernseys 13c per pound. All heifers sold by the pound. Also springing cows and heifers. Write or call. LINK BROTHERS, INC., Minong, Wisconsin. 5-*

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QUALITY dairy cows for sale. 100 Registered and grade Wisconsin and Canadian Holsteins, Guernseys—top production—top value. Guaranteed to be as represented. Private sales daily. Don't miss our dairy auction sale. 75 choice cows and heifers. 1st Wednesday night of every month. LAKELAND STOCK FARM, Addison, Michigan. Buy your cows where good feeling goes with square dealing. 6-apl

HOLSTEIN cows and heifers with production, type and size from our foundation Wisconsin herds. Artificial breeding, calfhood vaccinated, Bang's and T.B. tested. PIPER BROS., Watertown, Wisconsin. Telephone 2170. 6-*

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REGISTERED Ayrshire and Holstein cows and heifers. Vaccinated, Accredited. Five hundred herds to select from. PEARSON BROS., Avonsyde Farms, Waterdown, Ontario, Canada.

REGISTERED Holstein heifers due in August and September from dams with H. T. records to 662 lbs. Calfhood vaccinated. BERN. SCHOESSOW, Thiensville, Wisconsin.

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WANTED—To trade top quality registered Hereford cattle for top quality Holstein heifers that are bred to calve during the summer or early fall. Contact: R. B. McCANTS, JR., Mgr., Caw Caw Plantation, Orangeburg, South Carolina. 3-6

WANTED—100 top quality Guernsey or Jersey heifers that are bred to calve in fall. FLOYD LIPPS, Okeene, Oklahoma.

WANTED—Milking Herd. If you are thinking of selling your herd, or want to retire, contact me. Would like to get entire herd and prefer southeastern location. Will consider any breed. TOM NORMAN, Box 149, Madison, Georgia.

CATTLE MARKERS

ALUMINUM, brass and colored plastic. Send for catalog. GEO. F. CREUTZBURG & SON, Drawer 152-H, Wayne, Pennsylvania. 18-*

DAISY Cattle Markers complete with chain, brass tag for horns and neck. Write for folder. GOLDEN ARROW FARMS, Dept. C, Huntington, Indiana. 16-*

STOCKMEN'S SUPPLIES

GORDON'S Veterinary Penicillin (300,000 units) and Streptomycin (225 mg.) Ointment. Here is one of our finest Mastitis remedies. No fussing with syringes, just insert the contents of the tube into the udder. Safe and economical. $5.75 doses. W. G. INNERST, Cortland, N. Y. 21-12

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STOP Mastitis with new high potency Masti-Kure ☆5. Famous free flowing formula now has the added potency of neomycin (20 mg.) and cobalt sulfate (7.5 mgs.) at the same low price of only $6.85 per dozen tubes. Masti-Kure ☆5 also contains 250 mg. dihydrostreptomycin, 750 mg. Sulfacetamide, 750 mg. sulfathiazole and half a million units of penicillin, making it quickly effective in even the most stubborn cases of mastitis. Special for this month—Free with each order for 2 doz. tubes of Masti-Kure ☆5 a $1.25 plastic squeeze bottle of Purple Magic wound paint, the ideal remedy for cow pox and ring worm. For average cases get Masti-Kure Economy only $4.95 per doz tubes. For large udders get Masti-Kure fivefold volume Giant Syringe, $6.50 per half dozen. Shipped COD, or postpaid for cash. MASTI-KURE, Box 750, New London 2, Connecticut.

VETERINARY Supplies—Direct to you at big savings. Newest drugs and instruments for swine, poultry, cattle. Free catalog. BLUE RIBBON SERVICE, 230 East Locust, Milwaukee 12, Wisconsin.

VETERINARY Products direct to you at a great savings. Write for your free copy of price list and copy of "Animal Health News". UNITED PHARMACAL COMPANY, Box 296, Station D, St. Joseph, Missouri. 6-*

ATTENTION farmers—Fight mastitis with Dr. Hess & Clark's Pen-Fa (contains nitrofurazone, penicillin). Two tubes free with 10 ($7.90). Satisfaction guaranteed. KENSINGTON VETERINARY & POULTRY SUPPLY, Box 75, Kensington, Conn. 6-3

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COW stalls, pens, steel windows, hay carriers, steel fence post, post pullers. Immediate shipments. STANDARD EQUIPMENT, INC., Bel Air, Maryland. 18-*

SAVE on tractor parts—Buy direct from nation's largest combination stock of new and used parts. Free 1956 catalog. CENTRAL TRACTOR PARTS COMPANY, Des Moines, Iowa. 1-apl

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STERILE Washer for Surge, Sears, Conde and Universal Milkers. Scalds inside and out. See dealer or write today. HEISLER PRODUCTS, Springport, Michigan. 21-*

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GOOD mixed dairy hay consisting of clover, alfalfa and brome. $14.00 per ton loaded on car. LINK BROTHERS, INC., Minong, Wis. 5-*

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WE pay highest prices for your empty cotton and burlap feed bags. Write for our quotations. THE DAYTON BAG AND BURLAP COMPANY, Dayton, Ohio. 1-*

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EXCEPTIONAL buildings, 460 acres good productive land, near schools and shopping, good highways rapidly growing section of Upper Peninsula. Can be had for cost of dairy barn alone, three other barns, two residences and other buildings. Terms. P. O. BOX 424, Sault Ste. Marie, Michigan. 5-2

ON hard road 4 miles out, 460 acre fertile alfalfa type soil, growing all feed, 4 farm houses with baths, 60 stanchion barn, large mow with hay dryers, 100' heifer barn, calf barn, 100 cow tramp shed, 5 silos, bulk tank, money making dirt farmers farm, $125,000.00. Stock and equipment available, unusual terms to right man, many others. BROWNING REAL ESTATE AGENCY, Realtors, Culpeper, Virginia. 5-2

CENTRAL Florida—Small modern Registered Jersey dairy and restaurant. Milk $8.00 cwt.—no surplus. $45,000—terms if wanted. BOX 671, care Hoard's Dairyman, Fort Atkinson, Wis.

GRADE A Dairy Farms with forty cows. For information write ARIE BRIXEY, Pomona, Mo.

FOR Sale—Dairy and beef cattle farms suitable for excellent grazing, grain and row crops. Write us about what you would like to have. BRADHAM REALTY COMPANY, Realtors, "We specialize in farms". 2 N. Main Street, P. O. Box 430, Sumter, South Carolina. Phone 3-3377. 6-2

200 ACRES, 140 acres improved pastures, 50 in cultivation. Two fish ponds, four springs, $15,000.00 home, tenant house, dairy barn completely equipped. Large barn, implement shed. Tractor, combine, pickup baler, mowers etc. Implements necessary for dairy or beef operation. ¼ mile highway frontage. Price $40,000.00. Reason for selling, other interest. JOHN B. MANUEL, Bonifay, Florida.

OWNER (Widow) cannot operate this "humdinger" 120 acre farm half mile village limits with modern seven room and bath home, Two big barns, dandy tile and concrete silos, other buildings. Nearly 100 acres productive fields. Not a cheap farm but an exceptionally good one! Reasonably priced at $150 per acre. BAKER LAND & TITLE CO., St. Croix Falls, Wisconsin.

160 ACRE farm, near Elkhorn. Two cement silos, drive-through barn, milk house, combination hog barn and corn crib, large hen house, 2 good machinery sheds, nine room modern home, orchard. 160 acre farm, exceptionally good buildings, price very low. 314 acre farm with two homes, three barns, very productive farm. 333 acre farm, three adjoining farms, with barn cleaners, fine modern home. Many other choice farms. THORNTON REALTY CORPORATION, Elkhorn, Wisconsin. Parkview 3-3260. 6-3

VIRGINIA dairy and cattle farms priced to sell. For details write: JOEL M. COCHRAN, Realtor, 414 East Jefferson Street, Charlottesville, Virginia. 6-3

ONLY $32.00 per acre, 276 acre dairy farm, blacktop highway, 8 miles Siren, 6 room house, barn 32x50, 2 silos, other buildings, concrete milk house, 76 acres cultivated. 40 acre meadow, timber, stream watered pasture, close school, $2500 cash handles, balance long time 4%. Owner, other bargains. SPANGBERG, Siren, Wisconsin.

TWO fine farms, completely stocked, registered Swiss cattle. Good line of machinery. Modern buildings. Grade "A" market. Real producers, reasonable. Phone or write HARDY-RYAN CO., 253 South St., Waukesha, Wisconsin.

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323 ACRE farm—rent—sell—trade. Route #41, near Kenosha, Wisconsin and Illinois state line. Modern buildings. 186 foot barn, stanchions, silos. Eleven room house. GEORGE McCABE, 1909 W. Montrose, Chicago. Lakeview 5 0112.

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MUSHROOMS Spawn ("seed") plus complete instructions various growing methods $1.00. Free literature. LUXOR-HD, 641 South 19th, Newark 3, New Jersey.

BUSINESS OPPORTUNITIES

CREAMERY, 2 routes, general store, service station, feed store, 7 good buildings on 2 acres including 2 modern 3 bedroom houses built in 1952. $45,000 plus inventory. JOE BAILEY, Clarksville, Iowa. 6-3

AGENTS WANTED

NEED extra money? Take orders from farmers for the most widely used Liquid Fertilizer—"Na-Churs". Proven since 1946. Big demand already created. Liberal profits. No investment. Full or part time. Free details—write "NA-CHURS" PLANT FOOD CO., 712 Monroe St., Marion, Ohio. 5-2

GOOD earnings and future for experienced feed or seed salesman. Write INTERNATIONAL STOCK FOOD, Minneapolis, Minnesota.

SALESMEN WANTED

FARMERS, Dealers, Agents—make extra money. Demonstrate, take orders, new proven nationally advertised Gro-Green Liquid Fertilizer and Nitrogen Nutrients. Full-part time. Samples and demonstrating outfit free. CAMPBELL CO., Rochelle 79, Illinois. 1-*

POSITIONS WANTED

TEST cow milker. Experienced, steady, reliable man desires job as head test cow milker with good herd. BOX 664, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 5-2

VETERAN, single, B. S. in Agriculture and dairy husbandry, experienced in dairy farming, would like job as herd manager. BOX 677, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 6-2

COLLEGE graduate in Dairy Production—33 years old. Experienced in all phases of dairy herd and farm management, including showing, production testing, artificial insemination, crop and livestock production. Desire job as herdsman or farm manager with good purebred establishment where all programs of breed association are followed or with large commercial herd. Salary or percentage basis. BOX 669, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

HELP WANTED

WANTED—Married man, wife willing to run boarding house. Good wages. Fine herd of pure-bred Jersey cattle. No room for more than one child. BOX 643, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 2-*

WANTED—Experienced dairy herdsman to work with 95 cow Holstein herd. Excellent living conditions with house and utilities furnished. Write giving age, family, references, experiences and expected salary to PAUL FREEMAN, Gregorie Neck Plantation, Cocoawhatchie, South Carolina.

MARRIED man for large dairy farm located in Detroit area. Must be thoroughly experienced with feeding and general care of dairy cattle to take charge of modern barn milking sixty registered Holsteins. Barge milkers, barn cleaner, two-time milking with full time assistance. Salary and bonus with paid vacation. Modern six room house. Write full particulars to BOX 675, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 6-3

FARM Manager for large dairy farm in Michigan who knows purebred Holsteins, crops, modern farm machinery and how to get things done. Modern house. Close to schools and churches. Good opportunity for qualified man. Write previous experience, age and family. All replies confidential. BOX 676, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 6-2

PROGRESSIVE Herdsman capable of full responsibility for growing purebred herd; new pen barn, 5 stall milking parlor with individual grain chutes, self feeding hay and silage, 80 milking cow capacity; house and utilities; near Boston, Mass. Give education, experience and family. BOX 673, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

EXPERIENCED Farm Manager to run 400 acre Maryland farm. 125 purebred Holsteins. Completely modern home well located for schools and churches. Position available only to those who can demonstrate successful background. Preference to farmer who has conducted profitable operation for absentee owner. Top salary. Position available June 1st. BOX 674, care Hoard's Dairyman, Fort Atkinson, Wis. 6-2

WANTED—Thoroughly capable working herdsman, married, for 90 cow herd of registered Milking Shorthorns. Connect use commercial dairyman, but must have man with proven ability to give the extra feed, care and attention required for top production. Good base pay plus bonus for records completed; enable right man to earn $4,000 upwards annually. Modern house, no field work. Prefer man who likes or has experience with dual-purpose cattle, but this requirement not essential. Will consider present second man who can show qualifications. Give details, experience; work record. MARK L. GRAHAM, Waverly, Minn.

WANTED—Farmer, married, experienced, well trained working manager, in a modern general farming-dairy set-up. Guernseys. DHI testing 20 years. Modern machinery. Fine home and schools. Good working conditions. Near Allentown, Pa. Give full details in first letter. BOX 670, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

WORKING couple. Top wages and bonus. Guernseys. Modern house and milking parlor. In the sunny southwest. MON REPOSA DAIRY, INC., Box 1296, Artesia, N. M.

MARRIED man for general farm work on modern dairy farm, 220 acres, near Watertown, Wisconsin. 45 years or older preferred. Nice house, top wages for steady dependable man. BOX 673, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

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Special Opportunities

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PUREBRED Border Collie puppies from imported working parents. Champion bloodlines through four generations. MALYDA FARM Box #123, Carmen, Illinois.

TWENTY years breeding, training, handling Registered Border Collies of excellent imported heritage, give you intelligent, hard working cattle dogs. Try mine. M. S. PERROT, R-4, Ottawa, Illinois.

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Twice Honor Roll producer, with 778 and 742 lbs. fat on 2X, had a son on January 6, 1956, sired by HyCrest Leader, proven plus—2,533 lbs. milk and 143 lbs. fat. **HyCrest Conductor** is his name and he is offered for sale to some good breeder. Write for pedigree and price.

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"RHY C.H. GENERAL"

Select from one of our two production grandsons of the EX Queen cow "Jane of Vernon". Buy type with top production. Home of the World's top butterfat cow for three consecutive months in 1955. Daughters and sons of World Record Cows. Three 1100 lbs. fat records made within the last year. A bull available born November 20, '55, from "Master", whose dam and grandam are world record cows. His dam milking 60 lbs. as a Jr. 2 yr. old and from the 1109 lb. fat "Radiant Cow".

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Service age and calves: Dams with 600 to 860 lbs. butterfat. Sired by the "SWEETNESS" BULL. This is your chance to buy a real dairy bull. Come or write to: **PALA-BARR BROWN SWISS FARMS, Route #2, Barrington, Illinois, Barrington 1355M2.**

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Whether you are an old breeder, or a new breeder contemplating entering the ranks of the breeders of purebred Brown Swiss cattle, you are interested in the future of Brown Swiss cattle. Interest in Brown Swiss cattle is growing more rapidly today than in any other dairy breed in America. The reason for this is that Brown Swiss have proved themselves to be what real dairy farmers want.

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FREE Facts on GUERNSEY Profits

Send for "how-to" information about Guernsey profits — more income over feed costs plus the advantages of GOLDEN GUERNSEY, the milk that always has a steady, ready market.

THE AMERICAN GUERNSEY CATTLE CLUB
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DES MOINES, IOWA, APRIL 19TH
LOTS OF HEIFERS — ALL AGES
5 REALLY TOP BULLS
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Why not be the proud owner of your own herd sire? We have many out of 700, 800, or 900 lb. dams. Breeding stock you are looking for. State your wants, better yet, come and see for yourself. The World's Greatest Production Herd. Prices reasonable.

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Buy direct from farms where top production dairy cattle are raised. Over 300 to select from. Located in "Heart of Indiana's Dairyland," Kosciusko County. Experienced truckers available. Also Shetland ponies.

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Pure-Bred Guernseys
AT AUCTION

Lawguern Sells - at the farm

APRIL 10 - 1:00 P. M.

4 miles south of Mankato on County Farm Road

39 HEAD

25 Cows in Milk—12 Heifers—2 Bulls . . . Intensely Bred Langwater Blood . . . Negative to T.B. and Bang's. Heifers Vaccinated.

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of the Lawton Burton's Brenda-Myr Farm

LAWTON, OKLAHOMA
APRIL 9, 1956
AT 1:00 P. M.

Perhaps the best producing herd of Registered Guernseys in Oklahoma.

70 HEAD

Many H.I.R. State Records—Every cow on test continually, under farm conditions.

Foundation females of the most popular blood in the Southwest when assembled and subsequent bulls have been of Bournedale Rex, Langwater King of the Meads, Langwater Patrician breeding, and later by the great imported bull from Guernsey Island, "Shivalf the Warrior of Le-Vallor Farm", whose young things are most promising. Calfhood Vaccinated.

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MORT WOODS, Sales Manager ARDMORE, OKLAHOMA

77 BROWN SWISS AT AUCTION

The Waukesha Spring Sale
TUESDAY, APRIL 3rd, 1956

11 A. M. Promptly — Sale Pavilion

WAUKESHA, WISCONSIN

77 Reg. Brown Swiss

7 BULLS 70 FEMALES

A special offer on 4-H and FFA calves with special awards is a new feature this year.

Sale managed by, and catalogs from

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Serving Dairymen in 39 States *Always looking for Great Proved Sires & Top Technicians*

Choice registered Guernsey bulls by proven sires, such as HORSESHOE CONRAD ASTERBILT and out of at least 550 pound dams, for sale. Large selection to choose from, serviceable age and younger. Calfhood vaccinated. Bang's free, TB accredited herd. Write or visit us for pedigrees and full particulars.
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WAUKESHA, WISCONSIN

APRIL 23, 1956

A top service age young sire by a proved son of McDonald Farms Prediction out of a Very Good Steadfast daughter with 14382-738-7yrC-2x milking. His two sisters Honorable Mention All-American. From a female family that has produced two National Grand Champions, 5 National Blue Ribbon winners.

McDONALD FARMS, Cortland, New York

GRANDVU GUERNSEYS

Offering select Guernsey bull calves up to serviceable age. Sired by McDonald Farms Pro Melvin, an outstanding type and production Sire. Dams are daughters of the great proved high production Sire, Flying Horse Masters Royal, large, typy, good uddered cows with records up to over 10,000 lbs. milk, 550 fat as 2-yr.-olds, 305—2x milking. Heifer calves for sale, work for Sale, the blue ribbon kind. The Right kind at the Right price. Write or come to GRANDVU FARMS, Wrightstown, Wisconsin.

MID-WEST INVITATIONAL GUERNSEY SALE

APRIL 23, 1956 ★ WAUKESHA, WISCONSIN SALES PAVILION

50 FEMALES - 5 BULLS

A SAMPLE OF MID-WEST ENTRIES

FEMALES INCLUDE THE NATIONAL CLASS LEADER

LOCKSHORE SUNFLAME TAMIE; Classified Excellent; Born May 11, 1950; 15807—772—3 yrs. 365—3x; 16877—792—Sr. 4 365C 2x 1st in milk, 3rd in fat. McDONALD FARMS JOLLY VALENCIA; Born 2-17-54; Res. All-American Jr. Yr. 1955; Nominated for Futurity; By Neptune (High Time—Jolly Lady); out of McDonald Farms Heiress, 802 Fat. THE CLASS LEADER, LANGMEADOW CALICIA; Ex.; Born Aug. 1, 1949; by Caumsett King Royal. Calicia has: 11407—643 Jr. 2—365—3x; 13374—749 Jr. 3—305C—2x—Class Leader; 12596—654 Sr. 4—296C—2x—Class Leader; 14719—794—5 yrs. 305C—Pending. ALSO CALICIA'S BRED DAUGHTER by Langmeadow Envy's Royal.

BULLS INCLUDE

COLBY'S MR. ENVY by Flying Horse Rosemary General, out of Willow Brook Monarch Envy. Ex., 4 National Records for production. McDONALD FARMS ODESSA'S WINTON; by Pre Odessa; out of S. Maytime V.G. 14382—738—7 yrs.—365C—2x. HOMINY HILL BANNER; by Hominy Hill Coronation's Prince; out of Meadow Springs Lulu V.G. 15494—919—Sr. 4—3x—6 AR Daughters. DR. WELDY is sending a top Butterfat bull out of a V.G. Rosencavalier daughter with over 900 Fat. ALSO EXPECTING A TOP FROM JAKE TANIS. Space does not permit us to mention all. We feel we have an outstanding group to offer on April 23. Plan to be with us. MID-WEST SALE COMMITTEE, MALCOM J. BOYLE, Chairman

Catalog on request to Delbert H. Kingston & Associates, Box 404, Cary, Ill. Ph. MErcury 9-5531

GUERNSEY SALE

Located on old Green Bay Road 1 mile east of Cedarburg, or ¼ mile north of Hamilton, take Hy. 57 to Catholic Church in Cedarburg turn east on Hamilton Street 1 mile to Old Green Bay Road and ¼ mile north, 1 mile south of Grafton on Hy. 57 to Old Green Bay road and 1½ miles south on old Green Bay Road. Fred H. Krueger Farm.

TUESDAY, MARCH 27, 11:00 A. M.

Bang's and T. B. Tested

50 — Head of Guernsey Cattle — 50

This is a top herd of Guernsey cattle, one of the finest in Ozaukee County. All cattle are vacc. and all cows are artificially bred to Curtiss Candy bulls. A purebred bull has always been used in this herd. Mr. Krueger ships to Golden Guernsey Dairy and has received color payment for his milk. Cattle must be seen to be appreciated.

30 milk cows, 4 fresh in February with calves by side, 3 heavy springers due in March, 3 due in April, 3 due in May, 4 due in June, 4 due in July, 4 heifers due in August, 3 due in August, 7 due in September and October. 4 Guernsey yearling heifers, 3 heifer calves 6 months old, 3 heifer calves 4 months old, 1 Angus 4 months old.

This herd had a 5% test for the month of January and for most of the months through 1955. They are a herd of large type Guernseys and are very good milkers. Many fresh now and many due in Base months. Come and See.

Complete Farm Machinery Sale. Write for List.
Rollie Bast, Asct. Fred H. Krueger, Owner
Richfield, Wisconsin Cedarburg, Wisconsin

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Waukesha County can furnish you with most any kind of Guernseys you desire—grade or pure bred. Les Burtingham, Seidman, at your service. WAUKESHA COUNTY GUERNSEY BREEDERS' ASS'N, Waukesha, Wisconsin.

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Purebred and grades with outstanding production and type. Purebred bulls that will increase the value of your herds. T.B. and Bang's tested. Service to buyers is free. JEFFERSON CO. GUERNSEY BREEDERS' ASSN., Fort Atkinson, Wis.

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GOLDEN SUNSET JERSEYS—Registered Jerseys since 1899. Buy Golden Sunset bull calf now for use next fall and save $100.00. Send for proposition and list of calves.

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SIX STAR, VERY GOOD

Young Sire for Sale

From our top cow family. Dam has Tested Dam rating of 608 lbs. fat, high milk.

CHAS S. KELLY, Pixy Farm — DAVID KELLY, Hudson, Wisconsin

MICHIGAN STATE GUERNSEY SALE

LANSING MICHIGAN

COLLEGE LIVESTOCK PAVILION

50 Females, 4 Bulls

March 31, 1956

This sale will feature a group of cows and bred heifers that are fresh or close-up with a few heifers due in July, backed by heavy production—the kind Michigan has long been noted for. Out of state consignors are McDonald Farms, Hominy Hill, Ideal Guernsey Farms, Rolling Acres and Yellow Creek. The four bulls are outstanding not only for type but production as well. If you wish to add the heavy producing kind, plan to be with us on March 31.

MICHIGAN GUERNSEY BREEDERS ASSN.
Edward Wright, Pres.

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40 BEAUTIES IN ALL

At The

HEARTHSTONE-WHITEHALL HEIFER SALE

At Hearthstone Farm, Urbana, Ohio

APRIL 21, 1956

Selling daughters of some of the greatest name sires of the Jersey Breed—Also selling a thrilling herd sire prospect.

PLAN NOW TO ATTEND THIS EVENT

Sale Under Management Of
Chester Folck & Sons, Springfield, Ohio

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41st ANNUAL SPRING SALE

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VILAS E. YOUNG, Secretary
West Salem, Wisconsin

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The Profit Picture of Jerseys

$ Earlier maturity — lower feeding costs, quicker returns.

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$ More money for Jersey milk because of the higher content of protein, fat, minerals, vitamins, etc.

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These all make a picture of profit. If you want to see this picture of more profit per acre on your farm, buy registered Jerseys.

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OFFERS BULL CALVES sired by 5 and 6 Star bulls, and out of over 500 pound cows; also a 6 Star 5 year old bull.

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120 HEAD

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Apr. 5, Zanesville, Ohio
Apr. 7, Wilmington, Ohio

All sales to start at 1:00 P. M. and all to be held at the fairgrounds with the exception of Wilmington, which will be held at Wilmington College.

These heifers are suitable for 4-H and F.F.A. projects, herd replacements, and foundation stock. Consignments are included from most of the top breeders in Ohio and include many show prospects, heifers from outstanding production families and with strong pedigrees. Many calf. vac. Bang's test. An annual event sponsored by Ohio Jersey Breeders' Assn.

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Nearly Everyone Wants A "CONFIDENT" SON. The reason is his daughters are outstanding producers.

WE HAVE A FEW SONS AND DAUGHTERS AVAILABLE

WRITE US

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Established 1903

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Production Proven Inheritance in

JERSEYS THAT PAY

Commercial Grade A dairying has been in our family for fourteen years. In 1949 an intensified breeding program was begun. In November 1952 we started DHIA testing and now we are also doing Register of Merit Testing. In 1955, twice a year classifying was begun. DHIA records for 1955 show a 36 cow average with a $336.57 profit above feed cost of milk sold per cow, and a $49.25 profit above feed cost per acre of the total farm acreage—non-irrigated.

Visit us or write for information on bulls for sale from proven production families.

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ROUTE 1, BOX 45 CEDAR HILL, TEXAS

Profitable AYRSHIRES

The Breed with Production and Type
LARGEST PRODUCERS OF 4% MILK
at lowest feed cost
The Dairyman's choice for greatest net returns from his cows
Write for literature or list of breeders near you

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THE STARTING POINT FOR DAIRY PROFITS

Choice heifer calves and bull calves from Proven and the Double Approved bull, Carefree Diamond Jim, whose 10 daughters average 11,532 M. 4.32% 499 F. on two times per day milking. All calves from classified and official Herd Tested Dams. Write for pedigrees and prices.

CAREFREE FARMS
"Traditionally The Best" NEW HAVEN, IND.

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LONG LANE AYRSHIRES

are the result of the careful blending of two of the breed's greatest . . . Penshurst Jim and Neshaminy Miss Phett.

Let Us Prove We Can Give You More For Your Ayrshire Dollar

LONG LANE FARM, Marine City, Michigan

All Breeds of Dairy Cows and Heifers FOR SALE

Fresh and close-up springers. T.B. and Bang's tested. Deliver anywhere. Come and make your selections. Also nurse cows.

A. L. KELTNER - GREELEY, COLORADO

Service Age Herd Sire

We offer a real typy young bull born 11-9-54 from a "Good Plus" dam with 450 lbs. butterfat, 4% milk as a 3 year old. The sire has a wonderful group of 2 year heifers in production. His sire is Gold Medal and Plus Proven on 85 daughters.

Write or Phone for Information at Once.
Phone Graysville 9R10.

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ROSSIEBELLE MAGIC SHARON "Very Good"

WE OFFER A SON OF CARNATION PRESIDENT from THIS BEAUTIFUL COW

THE above picture of Sharon was taken during her three-year-old lactation. She was first prize two-year-old Senior and Grand Champion and winner of the best udder class at the 1951 Evergreen State Fair. She was first prize two-year-old at the Western Washington Fair and second at the Pacific International in 1951. She made 20,953 lbs. of milk, 743.5 lbs. of fat last year as a five-year-old standing in stanchion with just regular herd care. She is doing equally well again this year. She is straight Carnation and Hazelwood breeding.

Her son, Ear Tag B-245, was born June 5, 1955. He is 90% black and a beautiful, long bodied, straight topped calf with outstanding quality and dairy character.

He is sired by Carnation President our great breeding son of "Excellent" Gold Medal Hallrose Progresser from Carnation Homestead Inka Mutual the twice 1,200 pound grand champion show daughter of Governor of Carnation.

Write for picture, price and pedigree.

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BUILD UP YOUR HERD WITH

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COWS, HEIFERS, ALL AGES
Registered and Non-registered

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GEORGE W. SCHALLER & SON

HOLMEN, WISCONSIN

Thursday, April 12th, 1956

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70-Head Registered Holstein Herd

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All Vaccinated Animals. Have used top record bulls from the Northern Wisconsin Colony and Training School as their last three herd sires.

Cows to be offered with records over 500 pounds of fat.

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Top Holsteins-Top Service

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Burke-bred bulls and semen available.
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It's cattle grub time again

Grubs cause losses of more than $100 million annually. They can be controlled for a few cents a head. Here is what to do.

by E. A. Woelffer, D.V.M.

A FEW days ago we were examining a beef herd. As we rubbed our hands over the backs of some of the animals, we were reminded that grub time is here again in the northern half of the United States.

The majority of the grubs in this area come through about April 1. Further south they mature earlier.

Insect pests such as flies, lice, and ticks cause a considerable amount of damage to cattle each year, but the cattle grub causes the greatest economic loss. A conservative estimate of this annual loss is over $100 million.

How losses occur . . .

Here are some of the principal items involved:

(1) Milk production may be reduced as much as 25 per cent.

(2) Infested animals make slower gains, often as much as 20 per cent less than grub-free animals; some even lose weight.

(3) Damage to hides of beef and dairy cattle is extensive. More than 25 per cent of all hides reveal grub damage.

(4) Injuries often occur when cattle attempt to escape the adult fly during egg-laying time in the spring.

Most of us have heard the story of the life cycle of the cattle grub. To bring us up to date, let us review it very briefly. The common heel fly and the European warble fly lay the eggs that later develop into the larvae or grub. The eggs are laid on the hair of the cow's legs. This occurs in spring and early summer. Here they hatch out tiny larvae which bore their way through the skin.

From here the larvae work their way through the tissues and muscles to the chest and abdominal cavity. While still quite small, the grubs then work backwards and upwards toward the back of the animal. Here they grow larger and finally bore their way through the skin from the inside out.

At first, the location of the grub is recognized as a tiny rise or lump. Gradually the lump becomes larger and a tiny hole is observed in the center. The opening finally becomes large enough to permit the full-grown grub to crawl or wiggle out and drop to the ground. Here he changes to another stage called the pupae. From this stage the flies develop and the life cycle is repeated.

Grub control is cheap . . .

Here are two important considerations for all of us to bear in mind. (1) Grubs can be controlled for only a few cents a head. (2) Cattle can be treated for grubs and the tremendous losses prevented. The grub problem would diminish rapidly if everyone in the neighborhood did an effective control job.

Here is what you can do. Look for the grubs in your herd. When you observe them working their way out through the skin of the back, treat them.

If your herd is small, it is probably best to use a dusting powder containing rotenone. The powder is usually applied at the rate of 2 to 3 ounces per animal. The powder is rubbed in with a number of strokes of the hand.

A suitable container for applying the dust is a glass fruit jar with a perforated lid. Suitable mixtures may be obtained through your veterinarian or some local distributor.

Takes three applications . . .

A suitable dusting powder may be made up at home by mixing 1.5 to 2.75 rotenone dust with a neutral talc or other non-alkaline powder. Another mixture is made up by adding 1 pound of 5 per cent rotenone powder to 2 pounds of dusting sulphur. The applications are often repeated in 3 to 4 weeks to take care of the grubs which come through late. A third application is almost always necessary.

For treating large herds, particularly loosely housed or range cattle, a rotenone solution is also very effective. A power sprayer with a pressure of 300 (not over 400 pounds) is used. The nozzle should be held about a foot from the backs of the animals. From 3 quarts up to a full gallon of spray is recommended for each animal.

The spray mixture may be made up by thoroughly mixing 7.5 pounds of a 5 per cent rotenone dust with 100 gallons of water. Applications should be repeated twice at about 3- to 4- week intervals.

Hand washing with an emulsion is also satisfactory. A suitable emulsion can be prepared by mixing 12 ounces of derris powder (5 per cent rotenone) with 2 ounces of soap or 6 ounces of wettable sulphur to 1 gallon of water. The emulsion is vigorously scrubbed into the backs in the grub area with a stiff-bristled brush. Each gallon will treat from 12 to 15 head of cattle, depending upon the length of the hair. The process should be repeated monthly until 3 applications have been made. Emulsion may also be applied with a pressure sprayer.

More work being done . . .

Research workers in this country and England are attempting to improve present grub control methods. The primary object is to kill the grubs in the larvae stages before they do too much damage. Experiments now in progress hold much promise, but are not yet approved.

Under consideration is the consistent feeding of phenothiazene in salt, and phenothiazene in combination with salt and minerals. In an effort to kill the grubs before they reach the backs of animals, experiments involving injections of Lindane and the applications of phosphate sprays are being conducted. In one test a spray labeled 21-119 killed all the grubs, 245 in less than a week on 9 animals.

Squeezing grubs out by hand is sometimes done. Since an anophylaxis or secondary infection with pus or abcess formation may result, such procedure is not recommended.

VETERINARY COLUMN

E. A. WOELFFER, D.V.M.

Rickets in calves

Rickets is a bone disease of young animals. It appears less frequently now than it did a number of years ago. Livestock men are doing a better job of feeding and caring for their young stock.

When a calf has rickets its bones do not harden because there is not enough calcium, phosphorus, or vitamin D available.

Calves showing definite signs of rickets can still be found in many herds. A far greater number, however, have so-called border-line cases or sub-clinical rickets. These border-line deficiency cases go unnoticed but each year cause losses to the livestock raiser.

Natural sources of vitamin D are the ultraviolet rays of the sun, and properly-cured hay, particularly legume hay.

The sun cannot be relied upon to supply the needs of the young animal because cloudy weather, dust, and smoke may prevent the rays from exercising beneficial effects upon the skin. Also, in the colder climates, the young animal spends considerable time indoors during the winter.

If calves could be well supplied the year round with properly-cured hay exposed to abundant sunshine, and given sufficient amounts of calcium and phosphorus in their diet, rickets would cease to be a problem. Actually, such ideal combinations do not often occur.

Swollen hocks and knees . . .

Calves with border-line cases of rickets do not often show symptoms of the disease. In severe cases the symptoms are stiffness, bent and swollen knees, swollen hocks, and an arch in the back except immediately to the rear of the shoulder where there is often a sag.

The animal sometimes stands humped with the middle drawn up. Sometimes the calf with rickets becomes easily excited and occasionally may have an attack of fits.

In advanced rickets, breathing may be rapid and the animal becomes exhausted from slight exertion. Sometimes there is a depraved appetite, which is noted by a desire to chew or eat objects such as boards, wood shavings, and hair.

In severe cases the animal loses its appetite, especially for roughage. Fractures are common, especially in the long bones of the legs and in the region of the pelvis. This is further evidence that the bones are weak. Many animals die from this cause.

As the disease progresses, some calves go off feed and lose weight. If nothing is done to correct the situation, death follows. A very important loss from vitamin D deficiency in calves is the decrease in the rate of growth. Another serious effect is the increase in feed required to grow out the calf.

Prevention and cure . . .

To supplement the varying amounts of vitamin D obtained from sunshine and roughages, it is common practice to "fortify" commercial and home-mixed calf feeds. The cost of vitamin D supplements is relatively small, almost negligible, compared to the potential benefits.

Vitamin D may be supplied to home mixtures by adding 1 pound of irradiated yeast (4 million units to 1 pound) to each 10 pounds of calf meal. The usual amounts of vitamin D in calf starters range from 1,000 to 4,000 USP units of vitamin D per pound of calf starter, calf meal, or growing ration.

If your calf should have rickets under these feeding conditions, supply additional vitamin D. Often the daily intake is doubled when clinical rickets is present.

Other good sources of vitamin D are cod liver oil and ergosterol. Sometimes the oil containing the concentrated vitamin D is added directly to the milk. More often, however, the oil or irradiated yeast is mixed in the dry ration, generally in pellet form.

Ultraviolet lights are sometimes employed for supplying additional vitamin D.

TONGUE LOLLING

At a recent dispersal sale I purchased a 5-weeks-old heifer calf. After a few days, I noticed she was a tongue loller.

Please inform me if there is any medicine or operation that will cure this defect. Also, is tongue lolling hereditary?

Kosciusko, Mississippi **P. H. T.**

Usually there is a reason for so-called tongue lolling. I suggest the mouth, throat, and teeth be carefully examined for any injury, infection, or inflammation. There may be a temporary paralysis of some of the nerves that control the tongue.

This condition appears to be rare and it is doubtful whether it is a serious hereditary problem.

WATER IN THE WOMB

We have a cow that is not due to freshen for another 11 weeks; yet she is unusually large in the barrel, the largest side being on her left. She has drawn much comment from visitors as to multiple births.

Our veterinarian told us that it is just a case of too much water in the womb and there is nothing that can be done about it.

We have placed her in a separate box stall but she is still unusually uncomfortable whether lying down or standing.

Is there a diet of some sort that would relieve the discomfort?

Ladysmith, Wisconsin **R. C.**

From your description, we believe your veterinarian made an accurate diagnosis. The scientific name for this condition is Amnioallantoic dropsy. Usually the fluid in the membranes increases to the point where the cow is unable to rise. After she is once down, there is little that can be done.

A limited number of cases have been reported where normal calves resulted from Caesarean section or when hormones were administered. I know of one case that calved normally with very little difficulty.

Generally speaking, however, success is not the rule. An early disposal of the animal is usually the best procedure.

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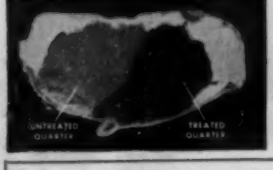

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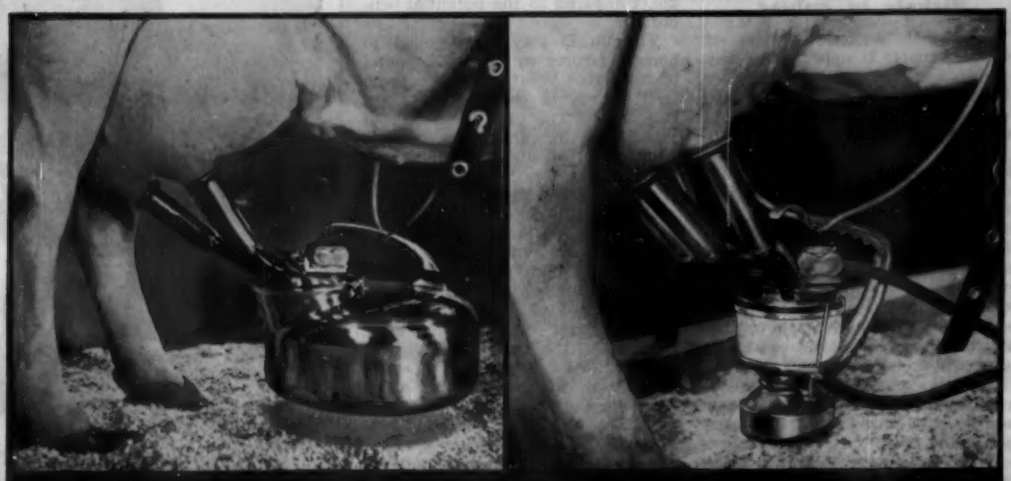

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